Printing Equipment Engineer

AUGUST, 1942

PREVENTATIVE MAINTENANCE

★

A primary defense activity of printing plants is to maintain maximum production capacity to meet the unforeseen demands of war.

A contribution of the printing industry to the war effort is preventative maintenance of equipment that will assure press production and reduce calls for repair parts upon the nation's manufacturing facilities.

Frequent and thorough lubrication—attention to electrical equipment, it is invaluable and likely to become increasingly unavailable—care of rollers to assure cleanliness and guard against excessive pressures—these are all typical of preventative maintenance that will help prolong press service and can help the war effort.

The Harris service organization is available to consult with and advise plant owners on means and methods to secure maximum press performance.

★

HARRIS OFFSET PRESSES

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PIONEER BUILDERS OF SUCCESSFUL OFFSET PRESSES

General Offices: 4510 East 71st Street, Cleveland, Ohio • *Harris Sales Offices:* New York, 330 West 42nd Street • Chicago, 343 So. Dearborn Street • Dayton, 819 Washington Street • Atlanta, 120 Spring Street, N.W. • San Francisco, 420 Market Street • Harris-Seybold-Potter (Canada) Ltd., Toronto, Montreal

We are looking beyond the HORIZON ☆ ☆ ☆ ☆

Today's important job is to win the war—and that is a job that will require the utmost in effort, unselfishness and quiet courage.

Like any other truly American organization, our company is contributing, to the war effort, the results of the developments we have been able to make with the help of the graphic arts industry. Some day that story can be told and will give you pride in your industry.

We all know that there will be a victorious end to the war. Because we do not know *when,* our company is carrying along our graphic arts research and development work with the vigilance and care which we feel is due our loyal customers.

This requires wide-awake surveillance of new materials and manufacturing methods, burning of much midnight oil, and the closest cooperation throughout our organization. By our success in watching over the interests of the graphic arts industry we help to prove the flexibility and efficiency of modern industry in a free country to meet whatever unusual demands may be required.

Ideal

We are prepared right now, through our foresight in developing alternate materials, to keep your equipment operating with little or no sacrifice in quality and production. Your orders and requests will receive the same full consideration as in the past.

IDEAL ROLLER & MANUFACTURING CO.

CHICAGO, ILLINOIS *Branch offices located in principal cities* LONG ISLAND CITY, N.Y.

URGENT

SCRAP metals are now second in importance only to raw metals. For example, about 50% of scrap metal is melted with 50% of new metal to make iron and steel for armament. It is said that 75% of this vitally needed scrap metal must come from industrial establishments. The Industrial Salvage Section of the War Production Board is now campaigning to increase scrap collections. Seven different groups of scrap have been defined. Two of these groups are waste paper and iron and steel, to which the printing industry can contribute substantially.★ The need is urgent, the reasons clear. It must be done now!

•

★*Printing concerns having four tons or more of old printing machinery to scrap will find that the War-Time Miller Scrap Allowance Plan offers a unique incentive. It is described on the opposite page.*

VICTORY

production line!

JUNK men, foundry men, machinists and finally our fighting men, are Victory's production line. They must have new metals to do their jobs and this depends on the scrap metal available. How much can you contribute — and how soon?

It takes months of valuable time to convert raw metal to finished armament. There is no time to be lost. Victory doesn't come to him who waits. One ton of metal today may well be worth ten tons next month.

The Miller War-Time Scrap Allowance Plan gives the printing industry its own unique and ingenious means of getting its thousands of tons of scrap metal into the war effort. What's more, its advantages are fourfold, to: —

1. Release potential tonnage of scrap metal for defense of our country.
2. Eliminate obsolete presses which, if resold, might become a menace to the standards of the industry.
3. Enable our customers and those who contemplate the eventual purchase of Miller equipment to set up a reserve for the rehabilitation of their pressrooms after the war.
4. Assist in liquidating unneeded equipment for its maximum cash value now.

It is required that a written agreement be made before any equipment is scrapped under the Miller Plan. Full details will be given gladly, on request.

Miller Printing Machinery Co.
Pittsburgh, Pa.

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Unmatched production facilities have made this country the arsenal of democracy. America *has* this capacity because her industries long have been the best salesmen on the globe, and have built more and more plants to serve the markets won through sustained advertising. In our economy, tank size advertiser and peep alike have achieved success that is the envy of all the nations. In this titanic struggle, it is American industry that comes through to win the war. Champion today is supplying materials for munitions, and business papers for Government. But its three great mills exceed the production that war demands of them, and customers large and small still are able to secure their needs from the complete Champion line.

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TECHNICAL BOOKS

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- **HANDBOOK FOR PRESSMEN — By Fred W. Hoch.** Book written by authority on all phases of flat-bed letterpress production for the practical pressman Contains 248 pages, 26 illustrations and 24 charts, $3 per copy, cash with order.

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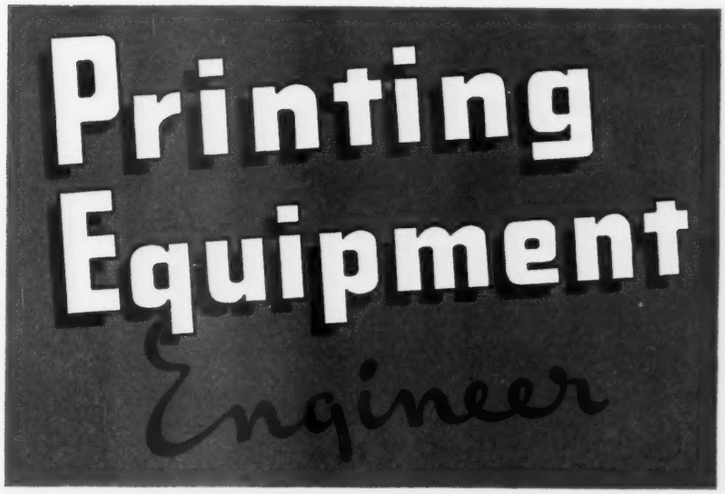
1276 W. Third Street
Cleveland, Ohio

A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field.



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"DON'T GIVE UP THE SHIP"

We are not going to slap ourselves on the back for how much defense work we are doing for Uncle Sam—that is our duty, but we want to cheer up you fellows who are wondering how you are going to keep your bread buttered during this serious time for the printing trade as a whole.

There are ways and ways of making ends meet. I always say to my sons when they wonder how they are going to do something — "THINK and keep thinking until you hit on the idea of how to do it."

When this emergency first hit us I was inclined to feel blue, but instead of giving up to that spirit, I began to think how we could improve our position, and the thinking brought on action. Action to the extent that we are busier than the proverbial cat. ALL BY OUR OWN EFFORT.

All over the country there are many war items that need die-cutting. Die-cutting of packages for fuses, cartridges, shells; die-cutting of all kinds of materials, and your regular presses will do it. Contact the defense plants in your vicinity and see what you can stir up and we will help you by producing the necessary dies that you will need. As the Pioneers, we have been doing it for forty-two years and all of this experience is at your service.

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G		Brass (Reinforced blade)
H		Copper (Ground below center)*
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M		Wood veining (No taper)

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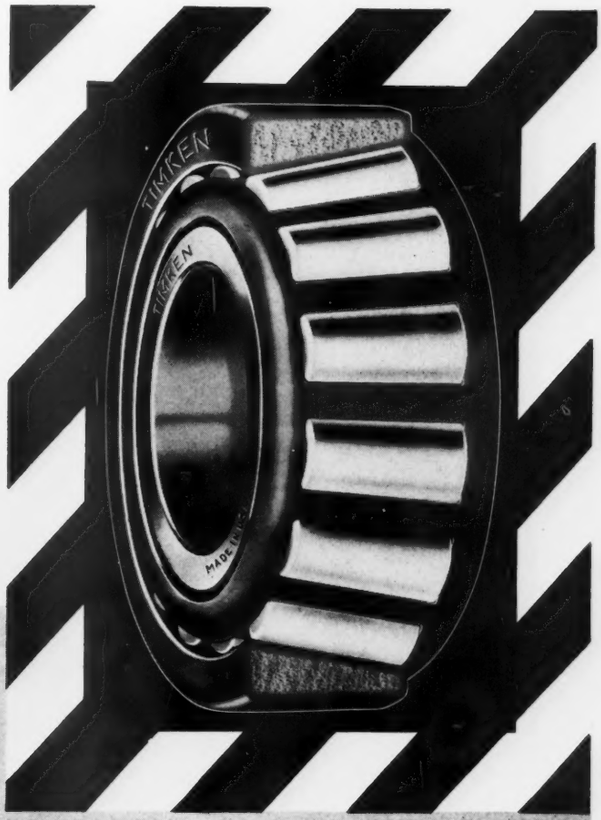

Printing presses will help to win the war. For through them morale-building information, vital instruction and inspiring news are spread throughout the civil population and combatant forces.

A few Timken Tapered Roller Bearings in your presses are better than none, but the more they contain the closer they will come to meeting the requirements of the war program and the economic necessities of peace.

By mounting all plate and impression cylinders on Timken Roller Bearings you will make your machines faster and at the same time greatly increase printing precision, for Timken Bearings will hold the cylinders in accurate relationship for many extra years of efficient press service.

Besides these vital bearing positions there are many other points of friction and hard service in printing presses of all kinds that greatly benefit from the use of Timken Bearings. It will pay you to see that your equipment has this complete protection. Our engineers will be glad to consult with you at any time.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

Support the Bureau of Industrial Salvage campaign for vitally needed scrap metal. Use the . . .

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We have just completed the Second Annual Survey of a continuing study on color: ☐ **COLOR ACCEPTANCE—its Normal Demands and Wartime Limitations.** It's yours for the asking and while you're at it why not request:

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240

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SEATTLE, WASH.

Executive Indispensability

By E. T. SAMUEL,

Plant Superintendent, A. S. Gilman, Inc., Cleveland, Ohio.

I once heard of a man in a certain city who was the only one that knew where to turn off the water in various places about the city. He was of the type that kept everything in his head. His idea was that he would be indispensable to the city. This condition, of course, has been corrected long since. I doubt if any city or business organization would permit such exclusive source of knowledge in this day and age.

This brings up the point that no man is indispensable to an organization. There is, however, one important point which an executive should watch in getting together a smooth functioning personnel—all information pertinent to the successful operation of a plant, including production information about live jobs going through the plant, should be obtainable from several sources within the plant, so that if any one responsible executive is absent from the plant by reason of illness or other cause, the needed information is available at once irrespective of any man's absence from duty.

Years of patience and experimentation are required to develop a system whereby a composing room foreman, after receiving a job envelope accompanied by copy and complete production instructions, can look over the material and understand all instructions readily before getting the job started through the plant.

An organization can't be built up over night. A period of years is required to get together and maintain a smoothly operating organization. Your success as an executive is dependent upon your ability to handle men and to secure their cooperation, by issuing proper production instructions and to be business-like in your relations with them.

To convert Centigrade Temperatures to Fahrenheit

Multiply the number of degrees Centigrade by 9/5 and add 32. The result will be the equivalent temperature in degrees Fahrenheit.

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Subtract 32 from the number of Fahrenheit degrees. Multiply the result by 5/9. Answer will be the equivalent temperature in degrees Centigrade.

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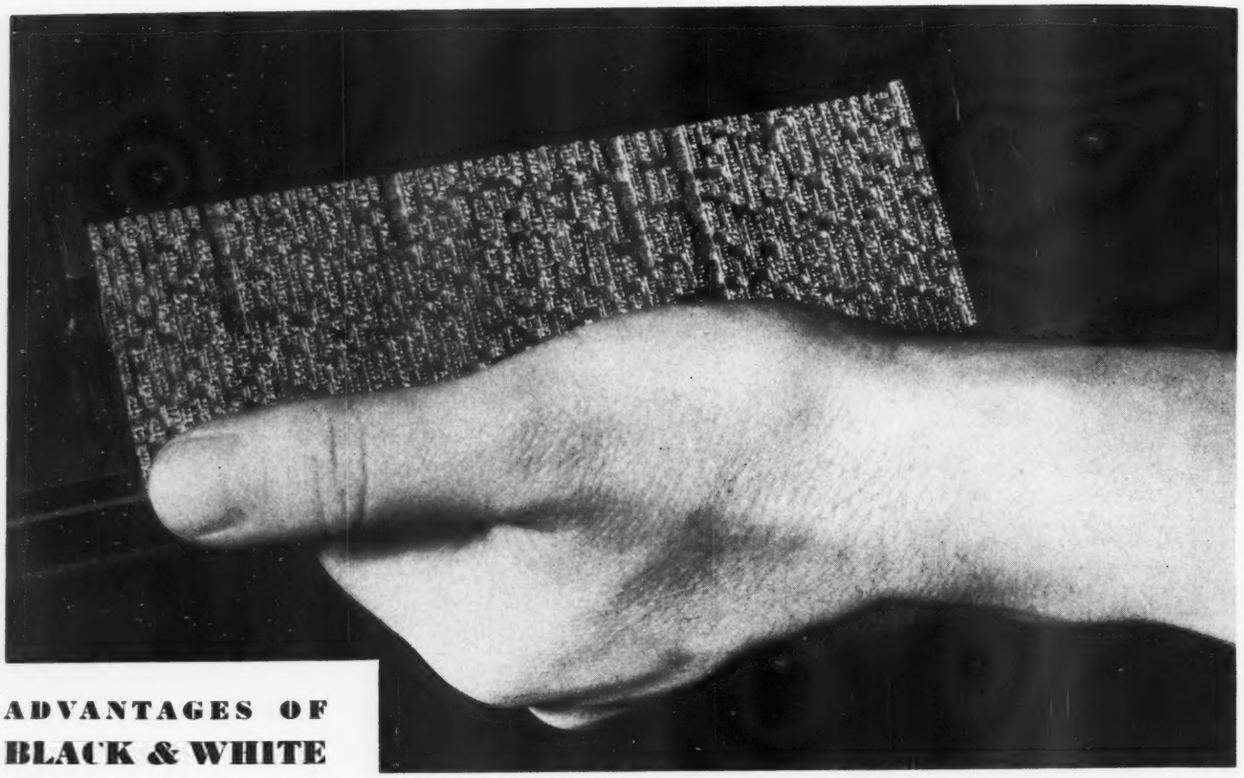

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IT PREVENTS EYESTRAIN, conserves energy, and promotes increased composing room production.

IT SAVES CLEANING MATS.

IT CAN BE INSTALLED on a pay-as-you-profit basis.

*ONE-THIRD reduction of errors is the usual average. A reduction of at least 25% is guaranteed.

One-third

of that type is PURE WASTE!

Our picture shows a big batch of corrections. It took some time to set those lines . . . and it will take a lot more time to insert them where they belong, re-prove the galleys or pages, re-read them, etc.

***One-third* of all that work can be prevented . . . by means of BLACK & WHITE Contrast Service. May we send you PROOF and our latest booklet?**

MATRIX CONTRAST CORPORATION

Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023

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European Agents: Funditor, Ltd., 3, Woodbridge Street, Clerkenwell Green, London, E. C. 1

Black & White

MATRIX CONTRAST SERVICE

Plastic Printing Plates

produced by using thermosetting matrix in conjunction with thermoplastic plate materials

A RATHER interesting development in the manufacture of non-metallic printing plates has been announced by Bakelite Corporation, a unit of Union Carbide and Carbon Corporation. Briefly, the process consists of making thermoplastic (vinylite) plates from Bakelite thermosetting matrices. By combining the peculiar properties of the two resins in the making of plastic printing plates, it is said that minimum deformation (shrinkage) of the printing area of the plate is obtained. Usually, this deformation can be held to within 0.001 in. plus or minus from the original pattern. Reproductions of 60-line up to and including 175-line halftone screens have been made successfully. There is no measurable loss of depths in molding operations. The plastic duplicate printing plates may be curved by mechanical means for rotary press operation.

Recently, there has been considerable interest in non-metallic printing and reproduction plates because of the critical type metals situation and the resultant conservation of printing metals. To those who are not informed, it is only fair to state that the thermoplastic and thermosetting resins from which these particular matrices, as well as other resins, and plates are made, are now covered by WPB General Preference Orders, and then are available in limited quantities for civilian consumption. As is well known, besides the many commodities made from plastics for civilian use, Government is employing them for the manufacture of war equipment, hence the necessity for the allocations. It is not known just to what extent the manufacture of plastic printing plates will be permitted under the present emergency.

Thermosetting Matrix

There is nothing particularly new about the adaptation of Bakelite to the making of matrices from which plates are molded. The Bakelite matrix sheets are specially processed fibrous boards in which a phenolic resinoid has been incorporated. This matrix making material is supplied in several sizes and thicknesses.

When a matrix is to be made from a form or cut, the Bakelite material will soften initially when subjected to heat and pressure, but hardens or cures in a few minutes to become permanently set and infusible, and thus becoming a permanent or a thermosetting matrix. Manufacturer states Bakelite matrix sheets will reproduce with great fidelity all the details of the original pattern plate and can be used to mold a large number of duplicate press plates. Pattern material may be electrotypes, zinc or copper engravings or type forms.

Molding technique used in making matrices from Bakelite material is the same as is used for making rubber printing plate matrices, except that before placing a sheet of matrix material on the heated form (or pattern), a layer of a special fill-in powder is spread over the form, the excess powder being scraped off with a wooden or hard rubber straightedge so that the filled-in areas will be flush with the printing face of the form. The purpose of this fill-in powder is to densify the face of the matrix completely in all areas. During the molding operation, the heat causes the powder to flux and become a solid mass integral with the matrix sheet. Thus it will be seen that the matrix hardens under pressure and in direct contact with the pattern.

Thermoplastic Plates

The thermoplastic printing plates which are molded from the thermosetting Bakelite matrix described above is composed of a black powder of approx. 20 mesh. In contrast to the matrix, the plate softens under heat and becomes hard and tough when cooled. Advantages claimed for the thermoplastic plates are (1) Dimensional stability, (2) Excellent moldability, and (3) Resistance to abrasion. These plastic plates, in addition to being printed from direct, have been used as patterns for stereotype mat molding but only of the dry mat type. They do not appear to break down under pressures required for accurate mat reproduction. However, because they are thermoplastic, the heat used in the wet mat stereotyping process would have an extremely detrimental effect upon the plate.

The Bakelite thermoplastic plate is light in weight. A plate of patent base thickness measuring 10 in. by 12 in.

(*Continued on Page 48*)

The plate from which this 133-line screen halftone was printed from direct, was made from Bakelite thermoplastic material. The plate was molded in a Bakelite thermosetting matrix. Manufacturer states plates may be produced with printing surface within 0.001 in. plus or minus accuracy from the original pattern provided an accurate press with parallel platens is used for molding operations.

LITTLE ENCYCLOPEDIA OF PRINTING INK — III

By STAFF WRITER

SERIOUS production problems occur if the ink is not suited to the paper. After all the workers who have had part in the production of a job have contributed their best efforts, *i. e.*, the copy writer, artist, photographer, engraver and other plate makers, the artist typographer and the rest, the reader finally sees ink and paper in concrete form. "Paper is part of the picture" and the picture is outlined in printing ink. Since records show that ink is less than 3% of the cost of the job, the best ink should be used.

Unhappily, many printers buy an ink that is just good enough to pass in color strength and that can be forced to work on the press but this policy is far from economical if a cheap ink causes stoppages of a press for which the charge is from five to ten dollars an hour. It is an object lesson to print a cheap and a good grade of ink of same color in degrees of thickness of film on the same paper, starting with barely enough ink to hide the paper and stopping at the point where the cheap ink mottles. Such a test shows that a very common cause of mottle is a cheap ink, so much being carried to get coverage that mottle results.

Letterpress differs from sister processes in that its form in relief is indented in the paper. All edges, angles and points not only of large plates but even of the smallest type character and finest halftone dot get more squeeze than the space between the outlines of the unit. Look at the print of a halftone with a glass. Unless impression is correct and the ink suited to the paper, a halo will be seen around the halftone dot because the letterpress relief indention puts more squeeze on the ink on the edges of the unit. Did you ever have trouble keeping the angle at the top of a capital A of fine six-point Gothic from filling with ink even after a careful makeready and selecting the proper ink for the paper? Next time this happens take a sharp blade like an overlay knife, and relieve the squeeze on the angle of the capital A by scraping partly or, if need be, entirely through the tympan where the angle strikes. The filling will cease.

When printing halftones, the dots should be examined under a glass and if there is a halo around the dot the ink or the impression may need adjustment. A greasy ink increases the halo, which looms up worse on coated and hard surfaced papers but is not so pronounced on s. and s. c., and the thin book papers used in thick books like dictionaries. Short, tacky inks improve the appearance of the individual dot as for instance engravers' proofing ink, but an ink of the same body could not be used on the production press at speed. Such stiffening of the halftone ink as the paper will stand without picking will decrease the halo. A stiff halftone ink is the best corrective and if none is available, a moderate addition of No. 3 varnish may substitute.

Suiting Ink To Paper

IF only No. 1 coated paper had to be printed, or if none other than a certain brand of cheaper coated were used, the problem of suiting ink to paper would be easier than it is. Once the paper reaches the press there is nothing the pressman can do to change it except by providing proper atmospheric conditions to produce correct moisture content and the correct temperature for presswork. Except in air conditioned plants, all the pressman can do is maintain correct temperature and in many plants even this cannot be done. So the problem remains to suit the ink to the paper. It is well known that the best grade of ink will not print well on the best grade of paper if not suited to it.

Probably the most important factor is paper of proper absorbancy. It will take the right ink well and the ink will lay smoothly and dry properly—points of vital importance if overprinting follows. Innumerable jobs have been spoiled because the first down ink did not take and dry so that following color or colors would print right on the first ink. It may have crystallized or chalked or remained in such a condition that overprinted colors picked off particles, causing filling.

When printing solids, softer inks are required for the thinner papers as a rule.

Matching Colors

IN matching a printed sample not only the overtone of colored but also that of black inks must not be overlooked. Even the tint of white papers varies. Some may be gray, cream, blue or purple in tint and an ink, even a black, of a certain overtone will appear different on the various tinted white papers. Some papers require a thicker film of ink for coverage than others. Thus antique book requires a thicker film than coated paper and the thicker film makes the same ink appear darker on one stock than on another. A tinted paper will strengthen the color of an ink with overtone similar to the tint.

Two Solutions of Suiting Ink To Paper

IF it is convenient and time permits the printer can order ink special from the ink maker, giving him proof, name of press, sample of paper to be used, drying time allowed for ink and such other special information required by the specifications on the job. This course is followed by many printers located in cities in which inks are stocked. It relieves the printer of suiting the ink to the paper and the job, saving him time and often loss caused by not using suitable ink. The ink maker is glad to render this service and welcomes it. The only unwelcome feature of this course is that it is difficult at times to use all the special inks ordered which may lead to an accumulation of unused ink.

The printer distant from the ink maker may lack time to get special ink and thus is put on his own resources. His problem will be less difficult if he has ordered paper with good surface, body, strength and folding quality and in the case of halftone jobs if he has specified the proper screen and negatives with necessary contrast. A flat halftone, with little contrast, increases the difficulty of suiting ink to paper and may make it insuperable.

Drawdowns and Rollouts

WITH an ink knife the pressman may draw down halftone or other ink on thin strong paper like sixteen pound bond in a very thin film or he may ink a brayer roller lightly and roll the thin film of ink out on the sheet. Holding the paper up to the light makes the overtone clear. As it shows in the highlights, it definitely affects the appearance of the halftone print. Halftone black inks have brown, blue or purple overtones, depending on the carbon black, toner in pigment form or oil soluble dye toner used. As a rule, the effect is more pleasing when the overtone does not conflict with the tint of the paper. Halftone blacks with brownish overtone show to advantage on cream tinted white paper while Prussian blue overtone looks well on bluish tinted white paper and reflex or purplish toner in the overtone appear well on pinkish tinted white paper.

Test For Picking

THERE are several ways to test the coating of paper for its resistance to picking. One is to moisten the thumb or finger, press it down on the paper and pull it away quickly and note how much of the casein, glue or starch and clay leaves and how much sticks to the body of the paper. This is not a sure test if too much moisture is used which softens the coating more than printing ink does on impression.

Another way is to try a pluck test of ink tentatively selected for use on the paper but this test is not conclusive unless the ink is tried on several different papers, when if it picks the coating from all it would appear that the ink has too much tack. If it picks the coating from only the paper for the job in hand, the coating is not up to standard and the ink will have to be softened or a softer ink used. This test is not conclusive unless an ink film of the same thickness is used as will be applied to paper on the production press and should be made with temperature not below 75 deg. F.

The sealing wax test is considered most reliable. One end of the stick of wax is melted over a flame and pressed down on the sheet of paper. When the wax returns to solid form it is pulled away

quickly from the paper. Weak coating comes off without fibers of the base while high grade coating pulls away fibers with it.

The first requirement of ink for use on coated paper is that it is soft enough not to pick. Any good halftone ink is conditioned in this respect by an addition of special soft reducing halftone ink which while ground in a very soft vehicle designed to stop picking, is so heavily charged with pigment that it does not weaken the color of the ink. A high grade ink is not impaired by this addition which cannot be said of any other reducer. Any added oil or grease such as petrolatum, paraffin wax melted into warmed ink, paraffin oil or kerosene weakens the color. If the special soft reducing halftone ink is not at hand, kerosene may be used sparingly in an emergency in either black or colored ink. In many poorly heated pressrooms kerosene has proven valuable as reducer because everywhere available.

Some apparently impossible stripping problems when printing solids on coated paper, (especially with margins so scant the press grippers were useless), on platen presses have been solved by securing 2 pt. brass rule to grippers at a right angle to them so that the end of the brass would hold the sheet after impression. This device has worked when strings could not be used to strip the sheet from the form. Kerosene in the ink helped to reduce the stripping difficulty.

Pat-out Tests

AFTER the ink with wanted overtone has been tried against picking (and softened if necessary) it may be patted out with the finger tip on the paper to test its absorbency and the penetrative quality of the ink on it. Some practice enables one to pat out the ink in a film of about the same thickness used in printing. Otherwise the pat-out would not indicate the behavior of the ink on the press. If the absorbency of the paper is normal and the ink is as penetrative as it should be, the vehicle will filter quickly through the coating, leaving the pigment and enough vehicle on the surface to bind it there and the ink will have lost its appearance of wetness and appear dry but will not yet stand rubbing without smearing. This setting should occur in a minute if the ink is suited to the paper. If penetration is slower, it may be accelerated by using a softer ink like reducing halftone ink. Slow penetration or poor absorbency of the paper may cause offset or sticking together of sheets in the pile.

On the other hand, if the ink penetrates too rapidly it may print mottled instead of sharply clear and rub from handling.

The drying quality of an ink may also be gauged from a pat out, but the sheet should not be exposed to the air but should be well buried in a pile of sheets. A moderate film should stand the rub test in two or three hours and be well dried in twelve hours. If the penetration of the ink and absorbency of paper seem good and the ink fails to dry at 75 deg. F., drier should be added,—from ½ to 1 oz. of drier to the pound of ink. If the ink is to be overprinted, paste drier is better—if not, cobalt drier may be used.

Temperature Makes A Difference

IN testing inks, the importance of the correct temperature must be kept in mind. Inks are ground in vehicles designed to work well in the fountain and on the rollers, to transfer freely from rollers to form and from form to paper, leaving the form clean, at from 70 to 75 deg. F., and will also dry well. A considerable drop in temperature as frequently occurs in the morning in many shops, radically increases the viscosity of the varnish vehicle of the ink so that it may be necessary to reduce it to get it to work and print well. Just enough of the softened ink should be used in this emergency to permit printing until the temperature rises to 70 deg. F., when the original ink should be substituted. On the other hand, at a very high temperature the ink decreases in viscosity and heavy bodied inks become softer and more fluid so that at times they must be stiffened to get the required sharp print and good coverage on hard papers by an addition of stiffer ink or No. 5 or even No. 8 varnish along with a little drier.

Effects of High Humidity

WHILE inks may be made to dry at a temperature of even as low as 45 deg. F., if the humidity is low and the penetration of ink and absorbency of paper favorable, drying is very uncertain in high humidity because both ink and paper absorb moisture. The problem is then presented of an ink containing more than 15% moisture being made to dry on a paper loaded with all the moisture its absorbency permits. It is apparent that a drier designed to turn the varnish vehicle of the ink from a liquid to a solid cannot be expected to function well in the presence of all the excess moisture in the paper, the varnish and the air. The paper has lost most of its absorbency for varnish, the penetrative quality of the varnish has been impaired and there is a limit to the proportion of drier to varnish which may be used without impairing the workability and printability of the ink.

Changes in Inks Should be Recorded

WHEN an ink, whose qualities are known, must be conditioned to meet an emergency and is not entirely used but a considerable quantity remains, it is well to write in ink on the label or in a book kept in the foreman's desk just what addition and what proportion was added, so that the qualities of the conditioned residue will be known when the time comes to use it. Otherwise unlooked for trouble such as delayed drying or chalking may occur.

National Executive Meeting Dates

American Photo-Engravers Association—Oct. 12, 13, 14, Netherland Plaza Hotel, Cincinnati, Ohio. Louis Flader, Commissioner, A-1446, 166 W. Van Buren St., Chicago, Ill.

A.N.P.A. Mechanical Conference—June 7, 8, 9, 1943, Hotel Statler, Cleveland, Ohio. W. E. Wines, Manager, A.N.P.A. Mechanical Dept., 370 Lexington Ave., New York, New York.

Illinois Newspaper Mechanical Conference—Ed Nagel, Secretary Champaign (Ill.) *News-Gazette.*

International Association of Electrotypers & Stereotypers, Inc.—A. P. Schloegel, Field Secy.-Treas., 949 Leader Bldg., Cleveland, O.

International Association of Printing House Craftsmen—August 9-12, 1942, Grand Rapids, Mich. Herbert Threlfall, International Secretary, 210 Lowell Ave., Providence, R. I.

International Trade Composition Association—September 24, 25, 26, 1942, Chicago, Medinah Club tentatively selected as convention headquarters. Wm. E. Lickfield, Secretary, 629 Chestnut St., Philadelphia, Pa.

Iowa Daily Newspaper Mechanical Conference—May 16, 17, 18, 1943, Des Moines, Iowa. Paul Kamler, Secretary, Clinton (Ia.) *Herald.*

Iowa Line-casting Machinists Conference—May 16, 1943, Des Moines, Iowa. Carl Bloomburg, Chairman, c/o *Register & Tribune*, Des Moines, Iowa.

National Association of Photo-Lithographers—Walter E. Soderstrom. Executive Secretary, 1776 Broadway, New York, N. Y.

New England Newspaper Mechanical Conference—Second week-end, October 1942—Hotel Statler, Boston. Walter C. Crighton, Secretary, New London (Conn.) *Day.*

Northwest Newspaper Mechanical Conference—1943 meeting to be announced. V. G. Eck, Secretary-Treasurer, Dunwoody Institute, Minneapolis, Minn.

New York State Newspaper Mechanical Research Conference—February meeting postponed indefinitely. Byron G. Culver, General Chairman, c/o Rochester Athenaeum and Mechanics Institute, Rochester, N. Y.

Pacific-Southwest Mechanical Conference—April, 1943, Los Angeles, California. Fred J. Moyer, Secretary, c/o Los Angeles *Daily News.*

S.N.P.A. Eastern Div. Mechanical Conference—August-September meeting postponed indefinitely. Walter C. Johnson, Secy.-Mgr., P. O. Box 1569. Chattanooga, Tenn. C. Frank Mann, Chairman of the Mechanical Committee, care of Louisville (Ky.) *Courier-Journal* and *Times.*

S.N.P.A. Western Div. Mechanical Conference—February, 1942 meeting postponed indefinitely. C. W. Tabb, Secretary, 723 Texas Bank Bldg., Dallas, Tex.

United Typothetae of America—Raymond Blattenberger, President c/o Edward Stern Co., 140 N. Sixth St., Philadelphia, Pa.

SPECIAL EDITIONS

Blue Water Edition

Boosting the Blue Water District at the southern shore of Lake Huron in Michigan and the city of Port Huron in particular as the finest vacation spot in America, the Port Huron (Mich.) *Times-Herald* issued its special annual edition on Wednesday, June 24. We don't know that the environment is conducive to good newspaper printing, but judging from the halftone engraving (there's lots of it) and the presswork in the edition it is evident that the *Times-Herald* mechanical executive staff and employees know how to print well. The edition consisted of 84 pages in 6 sections. This year's issue was printed in straight black ink with the exception of one section, the front page of which was printed in blue.

War Production Board Activities

Blomquist Heads New Section

ESTABLISHMENT of a new section of the Printing and Publishing Branch of the War Production Board to handle all printing and publishing machinery was announced July 20 by George A. Renard, Branch chief. Printing and publishing machinery formerly

Herbert Blomquist now heads Machinery Section of Printing and Publishing Branch, WPB.

was under the jurisdiction of the Special Industrial Machinery Branch.

Heading the new section in the Printing and Publishing Branch will be Herbert W. Blomquist, former Assistant Chief of the Pulp, Paper, Printing and Publishing Machinery Section of the now abolished Special Industrial Machinery Branch. Mr. Blomquist, previous to his association with WPB, was with the American Type Founders Co., in the Lithographic Press Division.

Mr. Blomquist will be assisted by D. B. Fell and George R. Keller, former associates in the original Machinery Branch.

In this new section, Mr. Blomquist and his associates will direct the processing of Production Requirements Plan PD-25A's for the printing and publishing machinery manufacturers, and the PD-1A applications for the release of machinery and equipment under Order L-83 for all civilian uses.

Rubber Conservation for Printing Rubber Products

ON July 21, the Director General for Operations of the War Production Board, in Amendment No. 9 to M-15-b-1, ordered further conservation of rubber by more stringent specifications for a long list of civilian products.

Of direct interest to the printing industry are the revised specifications regulating the amount of natural and synthetic rubber which may be used in compounding printing plate gums, insert and backing fabrics; offset blankets; newspaper blankets; press cutting rubbers; printing rollers; engraving rubber face stock, friction and fillers, and box die gums. Also included are specifications for rubber lined tanks, belting and press die pads.

This amendment does not prohibit the use of rubber or synthetic rubber in products used in the printing industry, but it does specify the amounts which may be used in compounding the products.

The changes in Amendment No. 9 are expected to result in the saving of from 300 to 400 tons of crude rubber per month. An additional 100 tons per month are expected to be saved by the changed rubber footwear specifications, with the same number of pairs manufactured per year as in the past.

Inasmuch as printing plants do not manufacture the items specified in Amendment No. 9 we are not publishing the rubber and synthetic rubber compounding specifications. Those interested, however, may obtain a copy of the Amendment from any WPB office.

More on Idle Type Metal

IN its July 18 issue, the *Daily Metal Trade* carried a news item from Washington to the effect that WPB probably will take over in the near future idle and excess inventories of type metal, consisting chiefly of tin, antimony and lead, according to unofficial reports emanating from WPB

It is believed this program will make available to war industries between 25,000 and 40,000 tons of copper, zinc, aluminum and electrotype plates.

WPB also is considering a proposal to take over excess stocks of tin oxide and tin anodes.

Material taken over by the government will be directed into war work through operation of Priorities Regulation No. 13 which establishes uniform rules governing sales of idle or frozen material.

Special Industrial Machinery Branch Dissolved

THE Special Industrial Machinery Branch of WPB was dissolved July 15 by an administrative order announced by Amory Houghton, Director General for Operations. The work of the branch will be assigned to other WPB branches.

It is believed that more efficient administration can be achieved if this work is delegated to the branches most concerned with it.

Six sections were continued within the branch. Among these were: Pulp and Paper, Printing and Publishing Machinery; Chemical and Allied Machinery; Textile Machinery, and General Industrial Machinery, such as plastics machinery.

Under the realignment, pulp and paper machinery was transferred to the Pulp and Paper Branch and printing and publishing machinery to the Printing and Publishing Branch.

Textile machinery was transferred to the Textile, Clothing and Leather Branch. The Chemicals Branch has supervision over plastics machinery.

Orders originating in the Special Industrial Machinery Branch will be administered in the future by other WPB Branches. L-83, imposing general restrictions on distribution of industrial machinery, will be administered by the Appeals Branch under the direction of A. E. Collins. L-159, relating to plastics machinery, will be administered by the Chemicals Branch under the direction of James A. Lawson.

Priority Assistance

A NEW service for applicants for priority assistance who use individual PD-1A certificates was announced on July 7 by J. S. Knowlson, Director of Industry Operations. The announcement is as follows:

"If applicants will enclose with their application blank a self-addressed post card, the case number assigned to their application will be stamped on the card, and it will be returned to them to facilitate handling of subsequent inquiries with respect to the application. All inquiries concerning applications should be submitted in writing.

"In order to avoid unnecessary correspondence, applicants are requested not to make inquiries concerning their cases for two weeks after they have been received by WPB. This is the maximum time normally required to process an application, and usually the application will either be granted or denied in a shorter time. If there is a delay beyond two weeks, or if for any reason supplementary information is submitted, use of the case number in correspondence will expedite handling and assure a prompt reply."

Revisions of WPB Orders

WAR Production Board regulations and orders which directly concern the Printing and Publishing Industry were brought up to date on July 3 by George A. Renard, Chief of Printing and Publishing Branch. This is the fifth of a series of releases designed to keep members of the industry acquainted with the availability of materials, etc. involved in manufacturing operations. The previous releases were T-166, issued on March 18, 1942; T-199, issued on April 9, 1942; T-293, issued on May 9, 1942; and T-454, issued on June 15, 1942.

Copies of any orders or releases mentioned herein may be obtained from local WPB offices, or by writing the *WAR PRODUCTION BOARD, Division of Information*, Room 1501, Social Security Building, Washington, D. C.

The purpose of this release is to draw your attention to orders and information issued by the War Production Board and affecting the printing and publishing industries. This release is intended only to serve as a reminder and nothing in it is to be construed as an official interpretation or explanation of any orders issued by the War Production Board, and it is not to be used as a digest of existing orders of the War Production Board. In any specific case, you are cautioned to refer to the order in question.

Inventory Restrictions, Paper: Paper, paperboard, paper products, waste paper and ilmenite which is a source of titanium pigments, have been removed temporarily from all inventory restrictions. This action was taken to permit the building up of inventories this summer in anticipation of a transportation shortage next fall and winter. It is our understanding that this policy may and should be applied to all materials and products in ample supply. This would include books and other printed products in order that transportation may be relieved as much as possible prior to September 30, 1942.

Obsolete Plates: Publishers are again urged to sell their old copper halftones *and old electrotypes* to electrotypers authorized to receive scrap.
Electrotypers desiring to receive scrap should apply for permission on Form PD-130, and are urged to do so. Means are available which enable scrap electrotype shells to be re-used as anodes.

PRP: Manufacturers who also do a jobbing business on items which they do not manufacture nor process in any way, and who are under PRP, may file Form PD-1X to obtain supplies for resale by their jobbing departments.

Textiles: The Protective Coatings Section of the Chemical Branch advise that it is granting A-10 on nitrocotton for pyroxylin coating and impregnating, until further notice; this rating is not, however, subject to guarantee. Pyroxylyn-coated or impregnated materials and light-weight cotton ducks are increasingly hard to procure, although many companies can still make delivery. It is urged that publishers plan to study substitutes for coated and impregnated material wherever possible, so as to be ready when the situation requires the use of substitutes.

OPA Warns Publishers

NEWSPAPER and magazine publishers, particularly those in Atlantic coast and Gulfport areas, were warned on July 17 by Price Administrator Leon Henderson to resist the pressure from newsprint producers who are attempting to collect higher than ceiling prices through an illegal zone delivery scheme.

Maximum prices for newsprint, based on zones of delivery, were established by Maximum Price Regulation No. 130. Port prices for shipments to certain ports are fixed in the regulation on a basis somewhat lower than those established for shipments to surrounding zones.

Under the delivery scheme reported in complaints to OPA, publishers who have been paying port prices are induced to accept newsprint deliveries in nearby, adjacent or surrounding zones and are charged the higher prices established by the regulation for these zones. In addition, the publisher must arrange and pay for the transportation of the shipment from the zone in which he takes delivery to the zone or port where his plant is located. This practice, in effect, automatically punctures the price ceiling and constitutes an evasion and violation of the regulation by the producers as well as the purchasers who agree to buy under such conditions of sale.

"The applicable maximum price in the sale of newsprint is the price established for the zone in which the newsprint is to be used and to which it finally is delivered." Mr. Henderson stated. "Newsprint destined for use in seaports, where the port price is fixed by the regulation, cannot be sold or purchased for more than the $50 per ton port price."

Publishers were requested to inform OPA of any cases where producers or sellers are attempting to resort to this practice. It was also pointed out that the purchase of newsprint is governed by the regulation and that publishers who pay more than the maximum prices established for the zones in which their plants are located and to which they make final delivery are also violating the provisions of the regulation.

At the same time it was pointed out that producers may seek adjustment of port prices if they petition OPA for relief in the manner set forth in the regulation and are prepared to prove that increases in production costs—as the result of wartime conditions such as the substitution of rail for water shipments—cause genuine hardship.

Magnetic Relay/Contactor

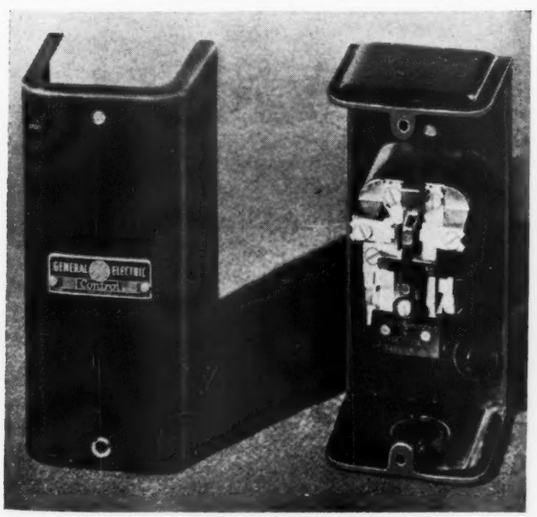
A new magnetic relay/contactor for use either as a relaying unit or motor starter has been announced by the General Electric Company. This new device, designated CR2790, is especially suitable for the control of pilot circuits, as a fractional-horsepower motor starter, or for use in conjunction with a magnetic switch controlling larger motors, heating or lighting circuits, or signal systems.

The relay/contactor can be supplied in either open form or enclosed in a general purpose housing. It is available in three contact arrangements—single-pole normally open, double-pole normally open, and double-pole, double-throw.

Wiring and servicing are simplified on the enclosed type by the use of a U-shaped cover which allows access to the front-connected terminals from three directions.

When the double-pole form is used with a momentary contact push-button station, undervoltage protection can be provided by using one pole as a holding interlock in the coil circuit. All forms have heavy silver-to-silver contacts and can be mounted on either an insulated or noninsulated base.

The unit is rated at 10 amp. when used as a relay; when used as a motor starter, the normally open tips are rated ½ h.p., 110 v., a.c. and 1 h.p., 220 v., a.c. The enclosing case is 3 in. wide, 2¾ in. deep, and 6 1/5 in. high.



View of General Electric's Magnetic Relay/Contactor for duty as control of pilot circuits, fractional h.p. motor starter, or for use in conjunction with a magnetic switch controlling larger motors, heating or lighting circuits, or signal systems.

The Harris-Seybold-Potter Company midyear calendar for 1942-43 is now being distributed. The painting reproduced was done for this calendar by T. M. Cleland, In presenting the theme, God Bless America, Mr. Cleland has chosen a neighborhood area of a metropolitan center as a location. He has developed a colorful, strikingly lighted architectural background; and in the foreground he has depicted the neighborhood's human side, with all manner of folks reacting to war tme patriotism. The calendar was printed in eight colors by Rogers-Kellogg-Stillson, Inc., of New York.

Foot-operated guillotine-type stereotype mat cutter in use in the stereotype department of the Detroit News.

Guillotine Stereo Mat Trimmer

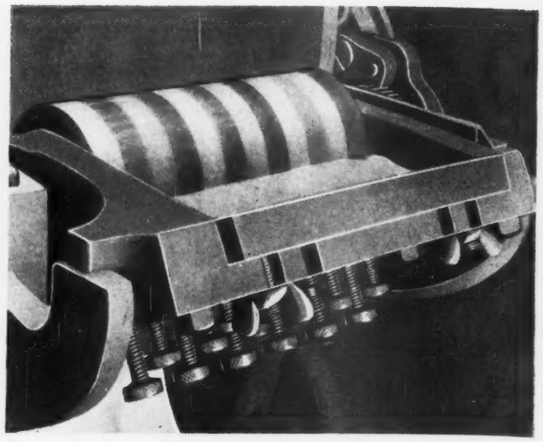
A GUILLOTINE - TYPE stereotype mat trimming device is in use in the stereotype department of the Detroit *News*. It was built for Stereotype Superintendent Charles M. Kirk by the News' master mechanic Fred Meyer. Briefly described, the cutter consists of a table upon one end of which is mounted a fixed knife. Working against the fixed knife is a vertically movable blade which makes its downward stroke in trimming the mat when a foot pedal is depressed.

As will be seen in the accompanying illustration, both knives are substantially mounted in the machine. Two heavy rods, one at either end of the movable knife, are connected to the foot pedal beneath the table top. Spring mounting assures return of the movable knife to upper position when the foot pedal is released.

Mr. Kirk, in describing the trimmer, states that one of its features (which does not show plainly in the illustration) is a length of piano wire stretched tautly just inside the movable cutter blade. The piano wire is positioned exactly at the proper distance from the knife to provide top trim of the mat when gauged from the folio rule at the top of the newspaper page.

When a mat is to be trimmed after molding, it is placed opposite the knives so that the folio rule rests underneath the piano wire gauge. In this way, every page mat will be trimmed exactly alike since the top cut is uniform in every mat. If the scribe lines on the chases are accurate and alike, they can be used for gauging purposes.

Mr. Kirk also states that since the cutter is foot-operated, the one doing the trimming work is free to use both hands to hold the mat, thus preventing it from twisting under the cutting action of the knife.



View of Baue printing press ink fountain sectional blade. To demonstrate flexibility of sectional blade screw adjustment, the roller here is shown with varying amounts of ink on its surface; i.e., the free end of each section has been adjusted to permit more or less ink to feed to the roller as permitted by the proximity of the end of the blade in relation to the fountain roller.

Sectional Ink Fountain Blade

CARL D. BAUE of 3947 Gravois St., St. Louis, Mo., has been granted a patent upon a sectionally-pieced ink fountain blade. Instead of a one-piece fountain blade one edge of which is usually adjusted against the fountain roller by a number of handscrews, Mr. Baue's fountain blade consists of a number of sectioned blades, each of which is independently adjustable by means of adjusting screws at one end against the fountain roller. On a small press, the blade may consist of 12 or more sections.

The sectional blade can be built for any press without making any changes in the fountain. The center distance of the adjusting screws is taken and a separate piece is fitted for each adjusting screw.

The sectional blade was designed to enable the pressman to obtain fine adjustment of the ink flow, and is claimed to be a saver in set-up time.

Each of the narrow sections comprising the fountain blade proper are carefully assembled together on a bar extending the width of the fountain. The assembled bar is then substituted for the one-piece blade. The sectional-blade bar is easily removable from the fountain body. The free ends of the sectional blades each have an independently adjustable screw to position it in relation to the fountain roller. The adjusting screws are mounted in a bar in staggered relationship as shown in the illustration.

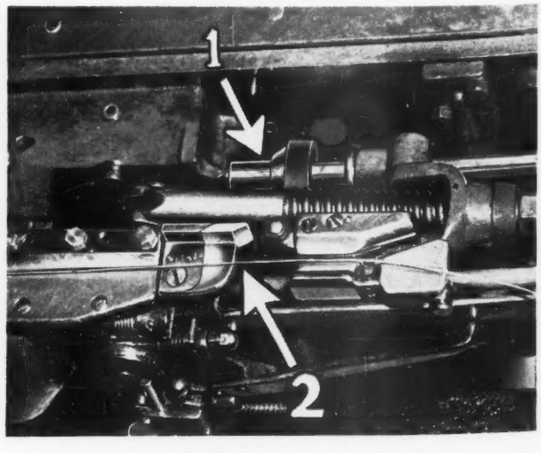
Newspaper Wire Tying Conservation

THROUGH the cooperative efforts of Mechanical Superintendent Al Rosene and Plant Machinist John Breen of the Duluth (Minn.) *Herald* and *News-Tribune*, the length of the waste wire clips on a Gerrard newspaper bundle tying machine has been reduced from 3⅜ in. to 1⅞ in., thereby effecting a saving of 60,000 ft. of wire per year.

Modification of the machine parts to secure shorter cutting of the waste clips was accomplished as follows: As is shown in the illustration, the length of the cutter tripping dog **2** (Part No. QO253) was extended 1¼ in. by making a new piece from 1 in. angle iron. To this new piece was brazed a section of ejector blade steel (on the outside) to harden it against rapid wear. The section of ¾ in. tubing **1**, was placed around the shaft (Part No. QG311), back of the casting and rubber collar to stop the cutting carriage in the same position as at **2**. This piece is placed over the left end (facing the machine) of the shafting.

An additional saving of 28 ft. of wire per pound in wire consumption was effected by changing from 17½ gauge to 18½ gauge wire.

Mr. Rosene states that he and Mr. Breen will be glad to answer any correspondence relative to the subject.



This illustration (art work by Meda St. Pierre) shows how certain Gerrard Wire Tying Machine machine parts were modified to reduce the length of waste wire clips by 1½ in. to effect a saving of 60,000 ft. of wire per year, in plant of Duluth (Minn.) Herald *and* News-Tribune.

View of new one-story and basement building in which is housed the business, editorial and mechanical departments of the Plainfield (N.J.) Courier-News. The building was occupied early in April. It is 100 ft. sq. and is constructed so that an additional story may be added later

Features have been provided in new building for Plainfield (N. J.) Courier-News to secure maximum production and to facilitate machinery maintenance operations

By STAFF WRITER

PERHAPS if Publisher Chauncey F. Stout should read this little story about the Plainfield (N.J.) *Courier-News* he might wonder why it is devoted almost exclusively to the construction of the building and to the production side of the plant. If he should ask us about it, we'd tell him that *Printing Equipment Engineer's* readers consist practically 100% of production and mechanical executives. While these men, of course, are interested in the business and editorial phases of newspaper publishing, yet their principal interest is in the mechanical side. For this reason, we feel Mr. Stout still will be interested in seeing what type of story is of interest to production executives, especially in view of the fact that it's about the new plant with which he is identified.

PUBLICATION of the Gannett-owned Plainfield (N.J.) *Courier-News* was commenced early in April from a new building at the corner of Second and Church Streets. The building is 100 ft. sq. and is set back 7 ft. from the walk lines on two sides. The remaining 30 ft. on the south side of the building is utilized for a driveway, parking area and loading platform. On the east side, 50 ft. ground area is used for the same purpose. In this way a truck may enter either driveway and travel entirely around the building.

The building is of one-story and basement construction. Like the original Youngstown (O.) *Vindicator* building and several others, the *Courier-News* building is so constructed that a second story can be added later. Approximately 20,000 sq. ft. of floor space is available on both floors.

The new building framework is of steel and concrete and the exposed walls are faced with brick with precast stone work trim. The large steel framed windows on the two street sides are of the commercial project type and are of such area that almost 50% of the outside wall space next to the street is glass to admit plenty of natural daylight. Nearly a fourth of the wall on the composing room side is of glass block construction.

The composing room flooring is designed for a live load of 250 lbs. per sq. ft. and the rest of the ground level floor has a capacity of 100 lbs. per sq. ft. Interior columns supporting the first floor are circular reinforced concrete. The roof is of precast slabs covered with 1 in. thick insulating board. Over this insulation is laid a 20-year bonded, built-up and smooth surfaced roofing. A sawtooth skylight extends over about two-thirds of the composing room to admit diffused daylight.

Heat and Light Facilities

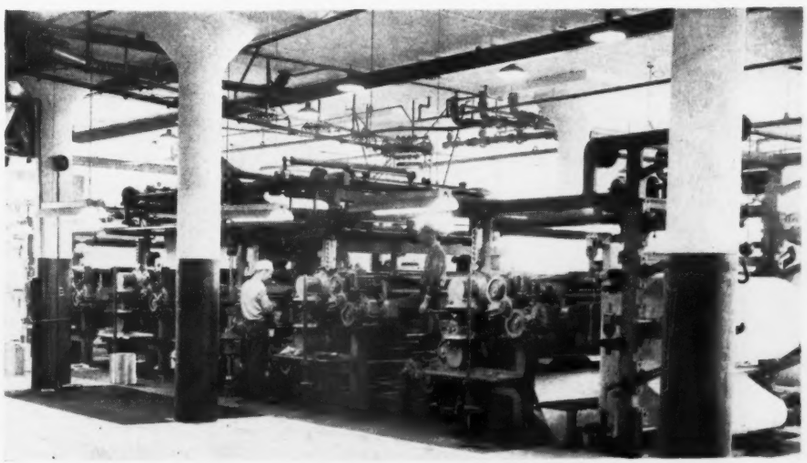
Heating facilities consist of a two-pipe open-vented return line system. Oil is used for fuel, but the burner may be changed over to coal or gas if necessary. Direct radiation radiators are used in the editorial room, general office and newsprint storage room. Some of the offices are supplied with concealed converter type radiation with grills. The mechanical departments are heated by blower unit heaters having concentric cone discharges.

Galvanized air ducts have been installed throughout the building for future air conditioning. An exhaust ventilating system leads from the rest rooms, locker rooms, dark room and the teletype room. Supplementary exhaust fans keep air moving from the stereotype and composing rooms.

Artificial lighting facilities throughout the building have been given considerable attention. In the general office, the editorial room, the publisher's office, and other offices recessed fluorescent lighting is used. The lights are inset so that the glass panel is flush with the ceiling. There are 524 lineal ft. of this type of lighting. Fixtures are installed in 16 ft. sections and each section includes two 40 w. tubes.

In the mechanical departments industrial suspended fluorescent lamps are used. Each unit consists of two 40 w. tubes mounted in a fixture 48 in. long. The light is of white quality.

In a recent conversation with the writer, Production Manager John A. Burke of the Gannett Newspapers stated



Paint plus modern lighting facilities provide efficient working surroundings in the pressroom of the Plainfield (N.J.) Courier-News. If one were not told, he wouldn't know that this Hoe four-unit press is located in the central part of the basement.

Frank J. Frisch is Mechanical Superintendent of the Plainfield (N.J.) Courier-News. Together with Production Manager John A. Burke of the Gannett Newspapers, he checked every detail for the mechanical departments in the new building as construction work progressed.

that the line, panel box and protective installation for electrical power are more than ample to meet present requirements. Just now, only 50% of the line capacity is being utilized. Circuit breakers are used throughout the system. Each panel box now is only carrying 75% of rated capacity. Spare panel boxes have been provided for 25% greater current capacity in the future.

The Composing Room

The composing room in charge of Foreman Thomas Heron, is located on the southern side and extends across the building. Its floor area is 98 ft. by 33 ft., providing some 3300 sq. ft. of floor space. The floor is of replaceable maple block laid straight pattern.

A feature of the composing room which was provided for against the time when equipment must be moved into or out of the room consists of double doors at the east side. The opening is 8 ft. wide by 8 ft. high and leads directly onto a loading platform.

The service elevator from the composing room to the stereotype department in the basement is adjacent to the make-up department. The form trucks containing the madeup pages travel only minimum distance to the elevator upon which they are conveyed to the stereotype department for molding.

Included in the new composing room equipment are a Model 30 Linotype, fitted with latest model Mohr Lino-Saw, a news dump bank, ad dump, copy cutter's desk, 10 ft. correction table, power-driven proof press, two saws, six ad frames, four makeup tables, type faces and miscellaneous equipment.

In the ad alley, a dumb waiter is used to transport mats and cuts between the composing and stereotype departments.

George E. Fink is night composing room foreman; Arthur F. Walls is ad alley foreman and the composing machines are in charge of Machinist John W. Cartwright.

The Stereotype Department

The Stereotype Department in the basement is in charge of Foreman William J. McClow. The floor area extends over 900 sq. ft. in a space 28 ft. by 32 ft. immediately next to the pressroom. Equipment here principally consists of a Wood Pony Autoplate with vacuum back, a 5 T. Kemp metal pot with Kemp immersion heating units, electric matrix dryers, router, saw, shaver, flat-casting equipment and a molding machine.

The Pressroom

Foreman Herbert E. Cox, jr., supervises operations in the pressroom. The room extends 30 ft. in one direction and 80 ft. in the other and consists of about 2400 sq. ft. of floor space.

A four-unit Hoe press with double folder has a capacity of 24,000 to 30,000 newspapers of from 4 to 32 pages, or newspapers consisting of from 32 to 64 pages can be printed at rates of 12,000 to 15,000 papers per hour.

To provide a means for lifting and conveying heavy press parts during repair operations, a monorail has been installed above the press. Another equipment moving facility just back of the press is an opening 12 ft. wide by 12 ft. high connecting with a hatchway 12 ft. long by 10 ft. wide. Steel stairs leading from the ground level down the hatchway into the pressroom can be removed if it is necessary to bring in or take out heavy machine parts. The hatchway extends beyond the main building line near the newsprint elevator. Over the hatchway is a steel beam to which can be attached a chain block for lowering or removing heavy machine parts.

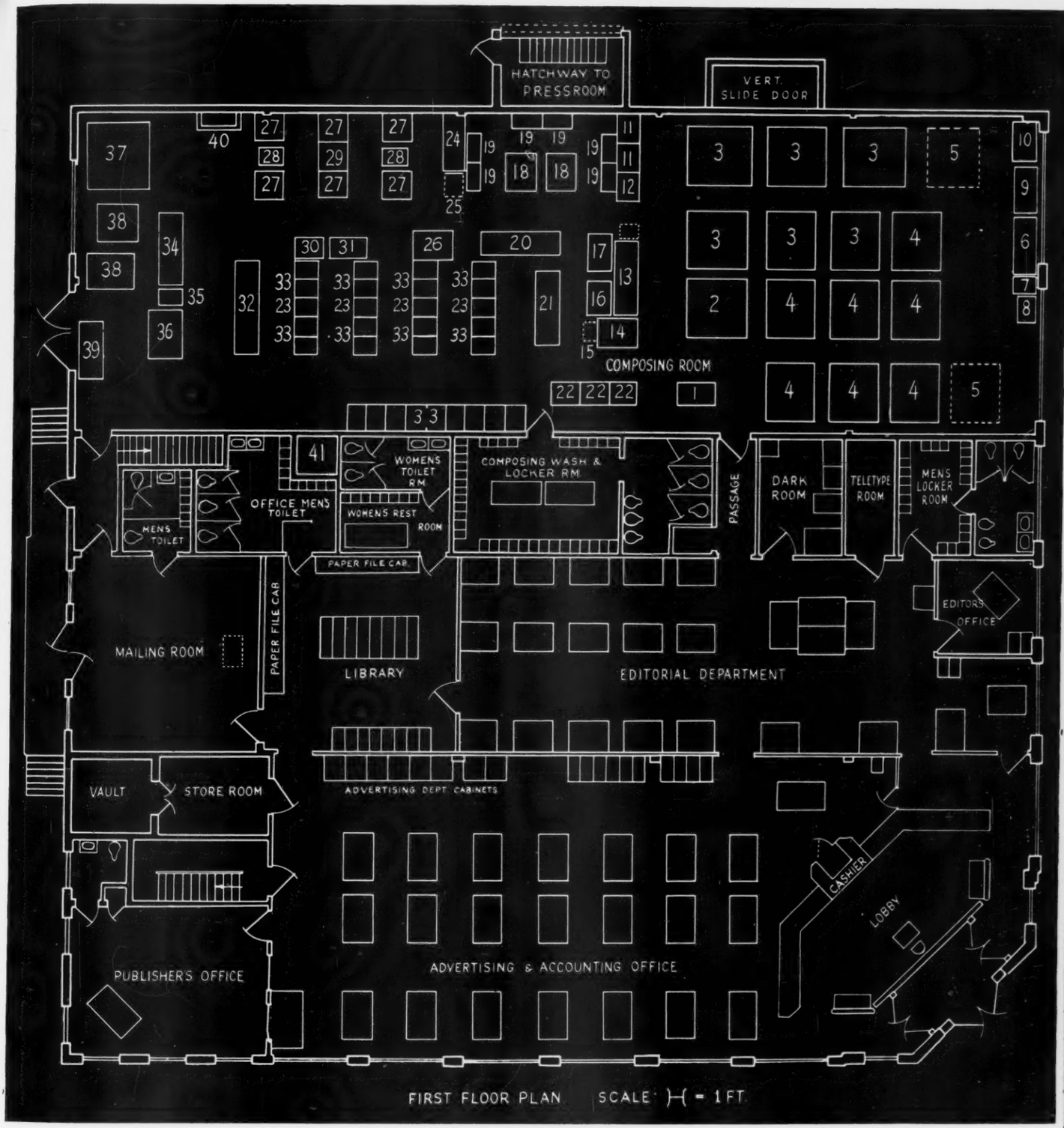
A newsprint elevator has been installed on the south side of the building to handle newsprint as it is delivered by truck to the loading platform. Newsprint rolls are transferred from the elevator to dollies which run on iron tracks extending around the press and between it and the paper storage room.

Two types of trucks or dollies are used. The elevator can be stopped at two levels so that newsprint can be stored two rolls high. The low dolly is used to deposit the first layer of newsprint and the high truck is of the right height to permit moving the rolls from it directly on top of the first layer. The high truck travels

FIRST FLOOR LAYOUT FOR BUSINESS, EDITORIAL AND COMPOSING DEPARTMENTS OF PLAINFIELD (N.J.) *COURIER-NEWS*

The Plainfield (N.J.) *Courier-News* is housed in a building 100 ft. sq. The volume of business permits placing offices and composing room on one floor. The stereotype department and pressroom are located in the basement. As is well known, every composing room is a problem in itself with respect to arriving at equipment arrangement so as to secure maximum straight-line production. While alternative arrangement of the composing room equipment may occur to our readers, yet we feel that the planners have secured an efficient layout, particularly in the arrangement of the ad alley equipment.

1—Foreman's desk
2—Head-letter Linotype
3—Ad Alley Linotypes
4—News Linotypes
5—Future line-composing machines
6—Machinist's bench
7—Sorts matrix cabinet
8—Machine parts cabinet
9—Elrod strip-casting machine
10—Strip material storage
11—Magazine racks for display machines
12—Ad alley foreman's desk
13—News dump bank
14—News copy bank
15—Lamson tube station at which copy is received from editorial department
16—Power proof press
17—Head assembly cabinet
18—Two Ludlow casting machines
19—Six Ludlow matrix cabinets
20—Ad dump bank
21—News correction bank
22—Proofreaders
23—Small makeup tables
24—Small ad storage bank
25—Future saw-trimmer
26—Page proof press
27—Ad assembly cabinets and worktops
28—Saw-trimmers
29—Strip material rack
30—Rouse vertical mitering machine
31—Rouse bandsaw
32—10 ft. makeup table
33—Page makeup trucks Commercial Dept.
34—Paper storage cabinet
35—Galley storage cabinet
36—Makeup table
37—Paper cutter
38—Platen presses
39—Type cabinet Elevator Service
40—Dumbwaiter is used to send mats and cuts to stereotype department in basement.
41—All made-up pages on trucks *33* are sent to and returned from stereotype department on elevator *41*.



on a wide gauge track and the low dolly is pushed along a narrow gauge track inside the wide track. The newsprint storage room capacity alongside the press is approximately 10 freight carloads.

Other Building Features

Adjacent to the boiler room in the basement, a 3000 gal. oil storage tank has been placed underground outside and at one corner of the building. Provision has been made so that in the event it is necessary to use coal as heating fuel, a steel frame has been inserted in the basement wall near the boiler room. The steel frame will be covered with cement with necessary manholes for delivery of stoker coal. A coal storage bin would then be provided. Provision has been made also for installation of a coal stoker to feed the firepit under the boiler.

Hot water for use in the building is stored in the boiler room in a 180 gal. tank. All rest room lavatories have hot and cold water. During the summer months water is heated by a special heater when the boiler is not in operation.

Approximately 500 sq. ft. space in the basement is devoted to the commercial presses operated by the company. Immediately adjacent is a room where the newspaper files are stored in steel cabinets.

A conference room for group personnel meetings is located in the basement. The room is 15 ft. by 30 ft. It is finished in knotty pine paneling. Furniture is made of knotty pine. Windows are draped in green fabric and three clusters of lights are suspended from the ceiling. These fixtures have inverted glass shades.

An 18 ft. by 18 ft. room in the basement is used for circulation department employees' meetings. Ample locker and rest room facilities also are provided in the basement for employees.

Mechanical executives are invited to submit to the editor descriptions of production or mechanical helps devised in their plants for the benefit of other executive readers of *Printing Equipment Engineer*.

Composing Room Costs

in the smaller newspaper and how they are affected by other departments — Production in war-time emergency

By A. H. SCHMEICHEL*

*Composing Room Superintendent, Muscatine (Ia.) *Journal*. Abstract of address delivered before Iowa Mechanical Conference, Des Moines, Ia., May 1942.

I FEEL that the subject of Composing room costs is as dangerous as TNT and as vital in newspaper printing as a victory is vital to all free men. I have been attending these mechanical conferences for several years and composing room production costs always has constituted a major topic.

With reference to the smaller newspaper, I feel that the cost of any composing room can be reduced if the business office and the editorial staff understand the problems of production. The understanding of production problems resolves itself into three major divisions as follows:

(1) We all know that almost every advertising manager is out to get every inch of advertising in the paper that he can possibly squeeze under the wire. We know hardly a day goes but what there isn't display copy brought in after the set dead line.

(2) Editors like to give the public every bit of news they can possibly get the composing room to handle.

(3) Every composing room foreman resents having deadlines broken when railroad trains have a fixed schedule and won't wait when newspapers are late.

At the Muscatine *Journal* we have gone a long way toward achieving harmony in observing deadlines, and through the cooperation of our advertisers deadlines are fairly well observed.

Train schedules have raised havoc with expenses by pushing schedules ahead. We must be out with the first edition by 1:30 p. m. and all the ads must be in the first edition. This means that the next day's ads must start coming in by that time or composing room costs are bound to go up. The *Journal* shows a proof to all advertisers and this brings about numerous changes. We find it cheaper to make changes than to have the advertiser hold up his ad until he is sure of prices and have the ad compositors idle from 12 to 12:30.

We have reduced comic features from 5 to 4 columns and set considerable 6 point to conserve space. In this war crisis, grocery and drug advertising is about the only competitive field in advertising and we are striving to give these ads the best setup possible.

Circulation must pay a good deal of our expense and there is some argument whether we are making a mistake by running an eight-page paper when that is all the advertising warrants. Eight-page papers necessitate making over pages and killing country correspondence after it has gone home. The only thing saved in this procedure is white paper, as the type had to be set and the makeover necessitates additional handling.

We are giving our metal additional care to preserve the tin. A thermostat has been installed to prevent the metal from overheating.

We prove every page for the editorial staff before sending it to the stereotyper.

We use our proofreaders to put mats or cuts with all ad copy.

The foreman, editor and city editor keep in close touch with the composing room to avoid overset that can't be used the next day.

All these things probably sound familiar to most of you but they are important things today.

Really, composing room executives need no war to make them cost minded! The business office has been doing that for years. Let business fall off and the composing room is expected to cut costs to make it up. We are supposed to be the wonder men.

The costs of a composing room are vital and unless a paper makes money there won't be a composing room. We realize this, and I believe most of us can show that our costs aren't out of line with what we are expected to produce.

Many of our business office executives as well as some newspaper composing room executives are asking the question: "What are we doing to keep production up to a high standard through the present wartime emergency?" It is no secret that most of us are short-handed at times because some of our printers have gone to war.

The present emergency means: More changes to keep the advertisers happy; more hours of work that don't show on the income books; more headaches to keep printers happy and satisfied when we push them day after day; more stories upon which to put leads; more heads to be set; closer supervision to slow down the wear of composing machine parts that can't be replaced or which are difficult to buy—and a will to turn out the best newspaper that can be produced with the facilities at hand.

I want to present the accompanying analysis of our composing room operation for the period, January through April 1942. This period consisted of 103 publishing days during which time we produced 1160 pages.

What Cooperation Has Accomplished

THAT much discussed cooperation by newspaper editorial, advertising and business offices in order to facilitate and economize on production expense has been accomplished in one newspaper plant during the past six months. Just one side of the production savings is of interest to photo-engraving superintendents in particular.

Editorial copy is grouped to provide less reductions. Advertising copy deadlines have been extended. Promotional work is now time work instead of rush.

As the result of this office cooperation, the photo-engraving superintendent has accomplished the following production savings by instilling a desire in his men to conserve materials: (1) The same number of copies requires 10% less film, (2) Etching flats have been reduced 26%, (3) Acid use has been cut 22%, Metal consumption has been cut 12%.

The superintendent of the engraving department feels this is only a start and expects to cut the total materials bill 10% more during the next six months.

An Analysis

of Composing Room Operation in plant of the Muscatine (Ia.) Journal, *January through April, 1942, by Composing Room Superintendent A. H. Schmeichel.*

103 publishing days. 1160 pages.

7249 journeymen hours. 1240 apprentice hours. 8489 total hours.

3 makeovers daily. 4 hours average per week job work. 1:30 p. m., First Edition time. 3:00 p. m., Last Edition time.

7 hours, 32 min. per page average, including supervision and machinist time.

993,200 lines. 4,770 hours or 207 lines per hour average.

4,770 hours machine. 3,719 hours ads (makeup, supervision and machine care).

The Measure of America

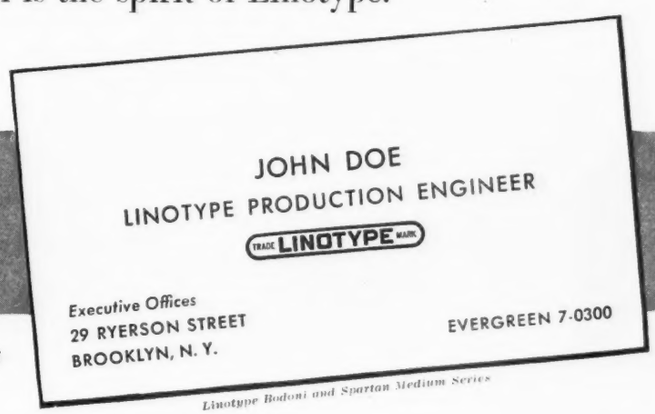
No man has ever measured America. There's no yardstick by which this can be done. You can't measure will-power; you can't measure spirit—even by results. There's more to it than that. That's America. And America's dominant thought today is to win the war, its subconscious thought—how now to carry on.

So it is with Linotype—today our plants are more than meeting the Government's schedules in the production of precision instruments of war.

The graphic arts industries are recognized as essential—publishers and printers must carry on and Linotype parts and matrices are still available for printing plant maintenance. Machines may be purchased and we can still supply them when their urgent need is properly recognized. These continuing problems remain very much a part of the day's work—and the Linotype organization endeavors to maintain its traditional obligation to the Press.

Our field forces continue to devote their training and energies to typographic and machine maintenance problems in the plants they visit. They are *Linotype Production Engineers* —helping the industry they serve to do its job better.

Such is the spirit of Linotype.



Linotype Bodoni and Spartan Medium Series

Buy War Savings *Bonds and Stamps*

Color, Roto, and Advertising Forum

(Conclusion of ANPA Mechanical Conference Report from July Issue)

AT the Wednesday afternoon Color, Roto and Advertising Forum, F. H. Keefe of the Newburgh - Beacon (N.Y.) *News* had been scheduled to act as chairman but was unable to be present. Production Manager John Park of the Chicago *Tribune*, acted as chairman. He was assisted by General Mechanical Superintendent John J. Shea of the Hearst Newspapers, New York, on the platform, and on the floor by Mechanical Superintendent Arthur H. Burns of the New York *Herald Tribune* and Production Manager F. L. Yeager of the Indianapolis *Star*.

Seated with Chairman Park were Harold Schmiedrich, Chicago *Tribune;* Martin Tiernan, Art Gravure Corporation of Ohio, Cleveland; Merle Rathburn, Adv. Dept., Marshall Field & Co.; T. J. Carnese, Ted Bates, Inc., New York, N. Y.; E. Thos. McBreen, of J. Walter Thompson Co., Chicago; L. S. Pinover, Intaglio Service Corporation.

This meeting started with the showing of a color movie by W. W. Warfel, Chemco Photoproducts Co., illustrating the various steps in the Kromo-lite Process, a simplified highlighting method. Methods of handling the copy for highlighting were shown and explained, as well as comparisons of the copy and the results obtained by this method. This process was especially interesting, in view of the fact that no masking is necessary in this method, and in view of Leon Link's statement later in the program that "The celluloid used for masking is getting scarce."

Leon Link, of the Newspaper Section, Printing and Publishing Branch, War Production Board, discussed possibilities of the use of lathes and other machines in newspaper plants in war production work. See page 31, June issue of *Printing Equipment Engineer*.

Harry L. Gage of Mergenthaler Linotype Company, presented a booklet and discussion on *Don't Screen Type*. Mr. Gage stated that this was not to be confused with the practice of screening heavy black type letters to make them appear lighter, but it referred to the practice of many advertisers in using a screen overprint or background for type matter, which makes it necessary for the composing room to furnish proofs to the engraver for making a cut of the type and screen. The points emphasized were that zinc could be saved, also chemicals, man hours and that readability and visibility are increased when the type is not overprinted with a screen. It was stated that "When a screen or pattern of fine black dots is thrown across the entire surface of a block of type, the effect on the reader's eyes is identical with the adverse conditions of gray paper or diminishing illumination. The screen becomes a partial black-out and the type less readable." Elimination of these screens over type matter would do much to improve first impression printing, and would reduce costs on engravings.

The old color plate register mark problem arose again. It was suggested that the engraver be cautioned to place the register mark not more than ⅛ in. outside the pattern if it is not possible to position it in a blank space within the design.

Hard edges on screened ad cuts were discussed next. One method for preventing these dirty printed edges was to paste strips of paper over the edges of screened areas on the back of the mat. This makeready on the back of the mat causes the screened edge to taper off downward from the printing level, thus relieving pressure on the edge of the screen.

When the question of how to improve printing was asked, L. S. Pinover stated he believed the use of a better grade of paper would be an improvement, but added that that was something upon which the publishers would have to act, since the paper is bought by the publishers—not by the mechanical executives. The increased use of newsprint for monotone and color roto printing was discussed, and John M. Hopkins reported that tests are now being made with newsprint on *This Week* with good results.

Co-Chairman Shea asserted, in speaking for the mechanical men, that 98% of metropolitan papers are well printed. This observation was made in response to a question submitted in which it was asked if the printing of first papers off from metropolitan papers having 9 or 10 editions had been improved. T. J. Carnese said that he has sent out to the newsstands for copies of editions and finds all of them well printed. He stated that where imperfectly printed copies are secured by advertisers, usually it is caused by the advertising representative who is so anxious to get some of the first papers to the advertiser. He said "the only remedy for this would be to station a boy with a ball bat in the mail room."

George Fuller, Stereotype Superintendent of the Cleveland *Press*, feels that in view of the present emergency, more mats will be used by the advertising

(Continued on Page 46)

Hold Conservation Meetings—*One of the most effective ways in which the rank and file of printing plant production personnel throughout the country can be made to realize the urgent necessity for conserving materials and supplies in printing plants is for mechanical executives to arrange a short chapel or collective departmental meeting at some suitable interval during the work-day. The idea is to impress upon employees that most of the materials going into printing plant production are critical materials. The urge is to help Government win the war by careful handling and maintenance of machines and the elimination of materials waste. In this way, each employee will be doing his share in helping along the major objective.*

In the picture shown above, such a departmental meeting was held in the pressroom of the Cleveland Plain Dealer *recently at which Production Manager Leon A. Link explained the need for materials and equipment conservation. After explaining the critical situation with respect to equipment, rubber rollers and supplies, Mr. Link concluded by expressing his confidence that while many* Plain Dealer *men were doing their part in active military service, those at home would not fail to meet their own comparatively minor obligation by conserving essential materials.*

HOE

4 months ahead of schedule ★★★

The *second large order* for munitions of war, entrusted to R. Hoe & Co., Inc. by the Ordnance Department of the U. S. Army, was recently completed and delivered *four months ahead of schedule.* That's how Hoe facilities, which in time of peace are used to build pressroom equipment for the newspaper publishers of the Americas, are being utilized today . . . in time of war . . . to help win the final victory . . . and finish the job sooner!

R. HOE & CO., INC., 910 EAST 138 ST., NEW YORK

BOSTON • CHICAGO • SAN FRANCISCO • BIRMINGHAM

Electric Motors

How to Select, Install and Maintain Them

By O. F. VEA*

*Motor Division, General Electric Co., Schenectady, New York

I.

PRESENT-DAY conditions make it necessary that all electric motors be babied. Maintenance programs must be intensified to prevent breakdowns, because a 24-hour-a-day, 7-day-a-week war production schedules cannot be interrupted—output lost today cannot be made up tomorrow. Even the failure of an inconspicuous piece of equipment can cause a considerable disruption in production.

On the other hand, industrials engaged in nonwar activities must "keep 'em turning" as long as possible because of the difficulty in obtaining new motors without the necessary priority rating.

This article will discuss a general maintenance program. Wherever available, the specific instruction sheet accompanying each motor should be followed.

Selection and Installation

A real maintenance program begins with selection. Motors must be chosen that are properly rated and protected for their work. The selection involves a study of requirements, such as continuous or intermittent duty, starting, torque, speed regulation, and the like. These all have a bearing on just what type of motor to choose.

In addition, the environment in which the motor is to operate should be considered, as this determines whether an open motor or some form of enclosed motor should be used, and how the motor should be located with respect to the driven load.

The next point to be considered is installation. The most important items from the standpoint of long, trouble-free life for a motor follow. The motor should be located in such a way that it is accessible for inspection and repairs. Of course, it is always advisable to install the motor in a place free from adverse conditions unless it is built in a protecting enclosure. It is also important to see that the motor has ample ventilation so that heat losses will be carried away.

A standard motor should not be installed where the ambient temperature or normal temperature rise is more than 40 c. The motor should be installed on a solid foundation which is free from vibration. If it is direct-connected or belted, care should be taken to secure proper alignment, which should permit rotor end-play within reasonable limits.

All these factors must be taken into consideration if inspection and maintenance are not to be discouragingly difficult.

Connecting the Motor

All electrical connections to a motor should be made tightly enough so that the vibration of the equipment will not loosen them. Wires joined in a conduit box should be either twisted together and soldered, or bolted together. These joints should be wrapped first with rubber tape, and then with friction tape.

Wires issuing from a conduit box, especially rubber-covered extension cords, should be held in some way so that there is no strain on the connections themselves. Usually a knot in the wire inside the conduit box, or the use of conduit-box fittings that grip the wire where it leaves the box, are the most convenient ways to obtain this strain relief.

Starting the Motor

A little extra care when starting a motor for the first time is a good investment. For example, trouble may be avoided by a look at the brushes of a direct-current or single-phase repulsion motor to make sure that they are seating properly on the commutator, and with the proper pressure. It is always good practice to turn the motor over by hand before applying power to be sure that it turns freely, and that no foreign materials or objects have fallen into the motor during shipment or handling.

Inspection

When the motor has been properly selected, installed, and connected, the maintenance program really begins. To insure efficient operation and maximum production, inspection and servicing should be systematic.

Frequency of inspection and degree of thoroughness vary, and will have to be determined by the maintenance engineer. They will be governed by (1) the importance of the motors in the production scheme (that is, if the motor fails, will the whole works be shut down?), (2) percentage of time the motor operates, (3) nature of service, (4) environment.

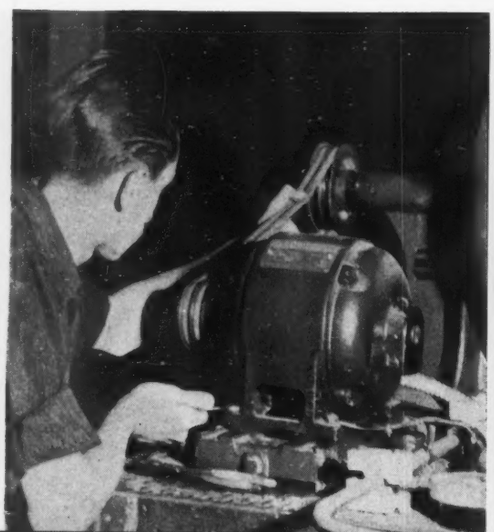
An inspection schedule must, therefore, be elastic and adapted to the needs of each plant. The following schedule, covering both a.c. and d.c. motors, is based on average conditions in so far as duty and dirt are concerned:

Every Week

1. Examine commutator and brushes
2. Check oil level in bearings
3. See that oil rings turn with shaft
4. See that shaft is free of oil and grease from bearings
5. Examine starter, switch, fuses, and other controls
6. Start motor and see that it is brought up to speed in normal time.

Every Six Months

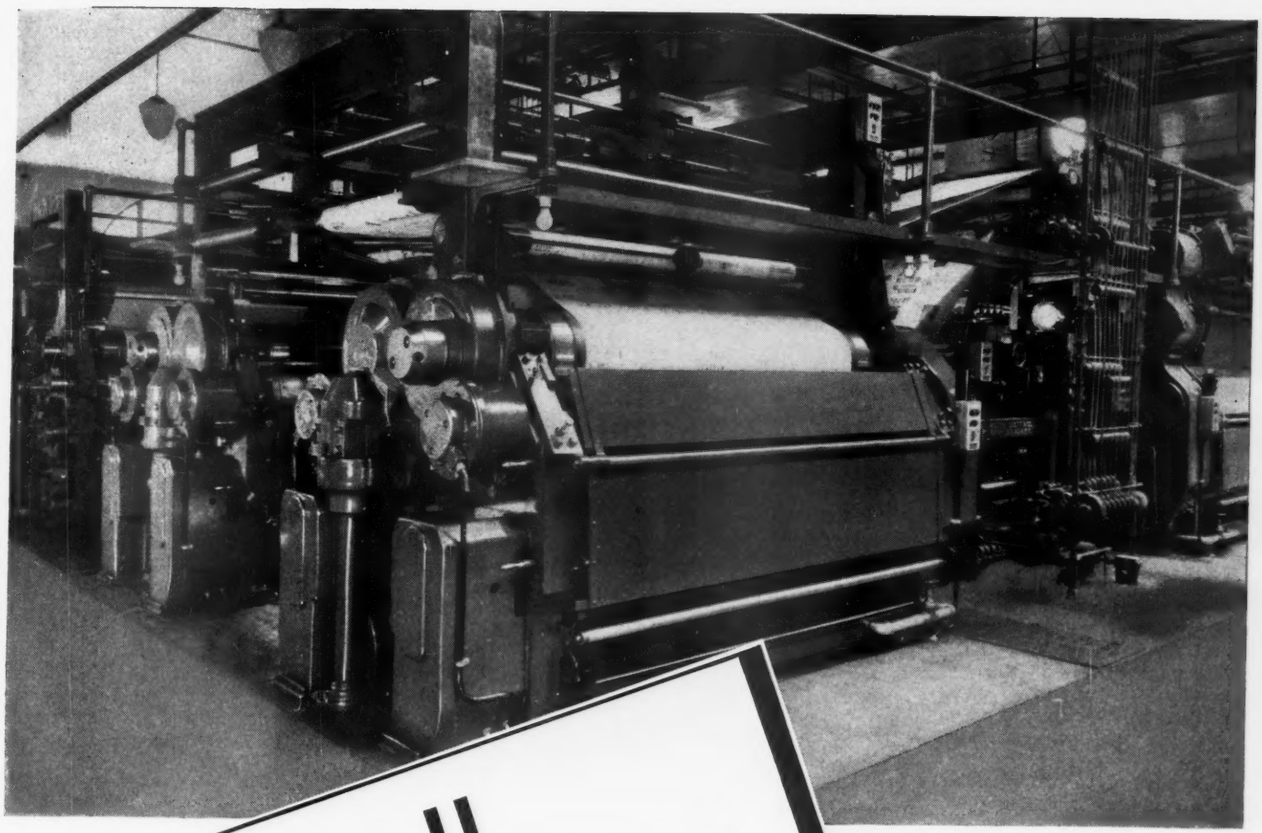
1. Clean motor thoroughly, blowing out dirt from windings and wipe commutator and brushes
2. Inspect commutator clamping ring
3. Check brushes and renew any that are more than half worn



(Left, Below)—*Install the motor in such a way that it is accessible for inspection and repairs. Care should be taken to align the motor properly with the driven load. Keep motors free from dust and dirt by frequent wiping. Nameplate can be quickly and easily read.*

(Center, Below)—*Connections to a motor should be made tightly enough so that the vibration of equipment will not loosen them. Wires joined in a conduit box should be either twisted together and soldered, or bolted together. Wrap first with rubber tape, then with friction tape.*

(Right, Below) — *Check oil level in sleeve bearings frequently. This is especially important today because of the scarcity of bearing material. Especially on larger motors, check motor foot bolts and end-shield bolts every six months to make sure that they are securely fastened.*

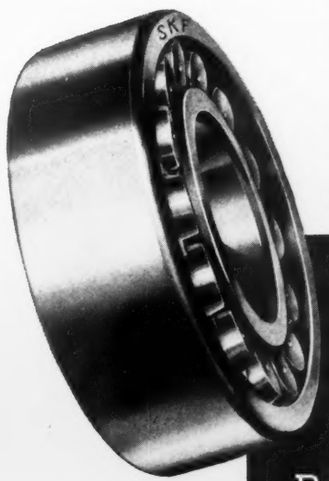


Let 'er roll ...on SKF Bearings

● *Built by* WALTER SCOTT & CO.

Let this Scott Extra Hi Speed Multi Unit Newspaper Press roll, Mr. Pressman, let 'er roll. A Victory headline may be born on that ribbon of web flashing around the cylinders; or a patriotic plea for future pilots; or a technical text for war workers. We need these things in a hurry, Mr. Pressman, so let 'er roll on SKF Spherical Roller Bearings. SKF's on the drive shafts make certain of axial and radial rigidity, and *that* means high speed, low starting torque, and quick pickup. That's why she can print 60,000 newspapers per hour without bearing trouble, Mr. Pressman, so let 'er roll. 5101

SKF INDUSTRIES, INC., Front St. & Erie Ave., PHILA., PA.



SKF

BALL AND ROLLER BEARINGS

4. Examine brush holders and clean them if dirty Make sure that brushes ride free in the holders
5. Check brush pressure
6. Check brush position
7. Drain, wash out, and renew oil in sleeve bearings
8. Check grease in ball or roller bearings
9. Check operating speed or speeds
10. See that end play of shaft is normal
11. Inspect and tighten connections on motor and control
12. Check current input and compare with normal
13. Run motor and examine drive critically for smooth running, absence of vibration, worn gears, chains, or belts
14. Check motor foot bolts, end-shield bolts, pulley, coupling, gear and journal setscrews, and keys
15. See that all motor covers, belt and gear guards are in good order, in place, and securely fastened.

Once a Year

1. Clean out and renew grease in ball or roller bearing housings.
2. Test insulation by megger
3. Check air gap
4. Clean out magnetic dirt that may be hanging on poles
5. Check clearance between shaft and journal boxes of sleeve-bearing motors, to prevent operation with worn bearings
6. Clean out undercut slots in commutator
7. Examine connections of commutator and armature coils
8. Inspect armature bands.

Records

The competent maintenance man will have a record card for every motor in the plant. All repair work, with its cost, and every inspection can be entered on the record. In this way, excessive amounts of attention or expense will show up and the causes can be determined and corrected.

Inspection records will also serve as a guide to tell when motors should be replaced because of the high cost to keep them in operating condition. Misapplications, poor drive engineering, and the like will also be disclosed.

Lubrication

One of the major features of a maintenance program, from the standpoint of effect upon the general performance of a motor, is proper lubrication.

The point has now been reached where the bearings of modern motors, whether sleeve, ball or roller, require only very infrequent attention. However, oiling and greasing of new motors is quite often entrusted to careless attendants who have been used to lubricating older designs, with housings less tight than on modern machines.

As a result, oil or grease is copiously and frequently applied to the outside as well as the inside of bearing housings. Some of the excess lubricant is carried into the machine and lodges on the windings, where it catches dirt and thereby hastens ultimate failure.

If the proper amount of a suitable lubricant is applied before starting, there should be no need to refill the housings for several months, even in dusty places.

Greasing Ball-bearing Motors

Only a high grade of grease, having the following general characteristics, should be used for ball-bearing lubrication:

1. Consistency a little stiffer than that of vaseline, maintained over the operating-temperature range.
2. Melting point preferably over 150 c.
3. Freedom from separation of oil and soap under operating and storage conditions.
4. Freedom from abrasive matter, acid, and alkali.

In greasing a motor, care must be taken not to add too large a quantity of grease or it will cause too high an operating temperature with resulting expansion and leaking of the grease, especially with large bearings operated at slow speeds.

The following procedure is recommended for greasing ball-bearing motors equipped with a pressure-relief greasing system:

Make sure that no dirt gets into the bearing with the grease by wiping clean the pressure-gun fitting, bearing housing, and relief plug. Always remove the relief plug from the bottom of the bearing before using the grease gun. This prevents putting excessive pressure inside the bearing housing. Excessive pressure might rupture the bearing seals.

With a clean screw driver or similar tool, free the relief hole of any hardened grease, so that any excess grease will run freely from the bearing. With the motor running, add grease with a hand-operated pressure gun, until it begins to flow from the relief hole. This tends to purge the housing of old grease. If it might prove dangerous to lubricate the motor while it is running, follow the procedure with the motor at a standstill.

Allow the motor to run long enough after adding grease to permit the rotating parts of the bearing to expel all excess grease from the housing. This very important step prevents over-greasing the bearing. Finally, stop the motor and replace the relief plug tightly with a wrench.

Greasing Ball-bearing Motors Not Equipped with a Pressure-relief System

A motor that is not equipped with the pressure-gun fitting and relief plug on the bearing housing cannot be greased by the procedures previously described.

Under average operating conditions, the grease with which the bearing housings of these motors were packed before leaving the factory is sufficient to last approximately one year. When the first year of service has elapsed, and once a year thereafter (or oftener if conditions warrant) the old grease should be removed and the bearings supplied with new grease.

To do this, disassemble the bearing housings and clean the inside of the housings and housing plates—or caps—and the bearings, with carbon tetrachloride. When thoroughly cleansed of old grease, reassemble all parts except the outer caps, or plates.

Apply new grease, either by hand or from a tube, over and between the balls. The amount of grease to be used varies with the type and frame size of the particular motor. The instruction sheet which accompanied the motor should be consulted for this information.

Addition of the correct amount of grease fills the bearing housings one-third to one-half full. More than the amount specified must not be used. When

Advertising In Wartime

WITH respect to contact of the advertiser with the consumer during wartime when the advertiser is devoting nearly all of his efforts to war work, read what Raymond Moley has to say in the July 13 issue of *Newsweek*. We reprint an abstract from that article without further comment. It is as follows:

"THERE is another reason why contact (of the advertiser with the consumer) should not be lost which is the concern not alone of producers who advertise but of everyone. Company A is learning in its laboratory to make a new product destined to be enormously useful to the public in peacetime. If, after the war, it gets this product before the public quickly, it can keep its workers employed and hire returning soldiers. But products, to be sold, need names, and names are usually the names of makers. Talk all you like about Emerson's man who made the mousetrap and the people who found him in the wilderness; but modern conditions require that we know his name and what wilderness he lives in. To keep reliable trade names alive by reasonable advertising is insurance against postwar letdown. Everybody has a stake in that.

"Fortunately, advertising in these times can both help the war effort and keep producers' names alive. No doubt it is the good taste and judgment with which this is being done that has won the approval of the President and so many key men in his administration. But there is one problem in this connection which remains to be solved in Washington. It concerns the two most important spots where a company's expenditures for advertising are reviewed—the Treasury and the contracting agency, the Army, Navy, Maritime Commission or what not, which passes on costs in the production of goods sold to the government.

"The Treasury, through Secretary Morgenthau, has announced a policy in allowing legitimate advertising costs, which, if strictly adhered to by subordinates, would be eminently satisfactory all around. At the same time there has been enough difficulty in arriving at a policy in the various contracting agencies to cause considerable worry among advertisers."

Our double job for victory!

KEEPING THE PRESSES ROLLING

PRODUCING FOR UNCLE SAM

We will keep faith with the printer and Uncle Sam. Our country, of course, comes first, but in all our rush, quality standards of our press blankets and inking rollers will be consistently maintained. We will help our customers in every possible way to get maximum service from present supplies. We will continue Vulcan laboratory research with eyes on the tomorrows and the production of still better blankets and rollers.

For Better Printing Impressions Specify

Let's all work for Victory. Send us your orders as early as possible and for your minimum requirements.

VULCAN

PRESS BLANKETS AND INKING ROLLERS

VULCAN PROOFING CO.
1st Ave. & 58th St. Brooklyn, N. Y.

reassembling the motor, any V-grooves that are found in the housing lip should be refilled with grease—preferably a fibrous, high-temperature-sealing grease—which will act as an additional protective seal against the entrance of dirt or foreign particles.

The technique for greasing motors equipped with roller bearings is very similar to that used for ball bearings.

Specific instructions for the individual design should be followed, however, because more frequent greasing or slight changes in technique may sometimes be necessary.

Oiling Sleeve Bearings

The oil level in sleeve-bearing housings should be checked periodically with the motor stopped. If the motor is equipped with an oil-filler gage, the gage should be approximately three-quarters full at all times.

If the oil is dirty, drain it off by removing the drain plug, which is usually located in the bottom or side of the bearing housing. Then flush the bearing with clean oil until the outcoming oil is clean.

In fractional-horsepower motors, there may be no means of checking oil level, as all the oil may be held in the waste packing. In such cases, a good general rule for normal motor service is to add thirty to seventy drops of oil at the end of the first year and to re-oil at the end of each subsequent 1000 hours of motor operation.

Most fractional - horsepower motors built today require lubrication about once a year. Small fan and agitator motors will often require more frequent lubrication, with three-month intervals between oilings.

Sleeve bearing housings are provided with liberal settling chambers into which dust, dirt, and oil sludge collect. The only cleaning necessary is to remove the drain plug and drain the oil, which will flush out most of the settled material with it.

Whenever the motor is disassembled for general cleaning, the bearing housing should be washed out with a solvent. Before being assembled, the bearing lining should be dried and the shaft covered with a film of oil.

Cleaning Ball Bearings

The pressure-relief method of greasing motors, described above, tends to purge the bearing housing of used grease. Complete cleaning of bearings, therefore, is required at infrequent intervals only. For a thorough and convenient flushing when the bearings are not disassembled, the following method is recommended:

Wipe clean the housing, pressure-gun, and relief fittings, and then remove both fittings. Every care should be taken to keep dirt out of the bearings. A bit of abrasive once in a bearing may not be removed even with the most thorough cleaning. Afterwards, it may become dislodged and get between the bearing surfaces with serious results.

With a clean screw driver or a similar tool, free the pressure-fitting hole in the top of the bearing housing of hardened grease. Also, free the relief-plug hole in the bottom of the housing from old grease to permit easy expulsion of the old grease during the cleaning process after the solvent is added.

Fill a syringe with grease solvent, such as carbon tetrachloride, and inject some of it into the bearing housing through the pressure-fitting hole, while the motor is running. As the grease becomes thinned by the solvent, it will drain out through the relief hole. Continue to add solvent until it drains out quite clear.

Replace the relief plug and inject solvent until it can be seen splashing in the filling hole. Allow the solvent to churn for a few minutes, and then remove the relief plug and drain off the solvent. Repeat the churning operation until the solvent runs clean.

When using carbon tetrachloride for flushing, replace the relief plug and inject a small amount of light lubricating oil. Allow it to churn for a minute or two before draining off. This will flush out the solvent. To complete the job, grease the bearing, using the method previously described.

This method permits the cleaning of all standard motors operating at an angle not exceeding 15 deg. from the horizontal (except totally enclosed, fan-cooled motors). For these motors, the bearing at the pulley end may be flushed as described. To clean the fan-end bearing, first remove the fan cover and fan in order to make accessible the drain plug at the bottom of the housing.

(*To Be Continued*)

Meets Transportation Problem—*The main manufacturing plant of the Capital City Printing Plate Co., Des Moines, Ia., is located approximately a mile from the Des Moines loop district. To meet the restricted transportation problem, a downtown loop office was opened recently. Orders and deliveries are concentrated in the new office for transportation to the main manufacturing plant. Deliveries to customers are made on foot and via bicycle, thus complying with ODT's delivery limitation order. Company reports customers are cooperating whole-heartedly, many bringing their orders direct to office themselves. Being located on the ground floor, many people pass the office daily. This offers opportunity for window displays featuring critical materials used in plate making. Printers or plate makers in other cities might utilize the idea.*

ATF Darkroom Film and Paper Cabinet

A cabinet for storing unexposed, as well as exposed, film and paper, has been announced by American Type Founders. The upper section contains four drawers, each constructed with light-tight automatic cover slide. The lower half of the cabinet, with hinged door, provides storage space for boxed film and miscellaneous supplies. Wood construction throughout, light proof and dust proof. Finished in gray enamel with black masonite top. The Model A cabinet has 16 in. trimmer knife for cutting film or paper to odd sizes. The Model B cabinet is furnished without trimmer knife. The cabinet is built by Hamilton for American Type Founders.

PRINTING PATENTS REPORT

Covering Patents Issued June 30, July 7, July 14

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading for the dates specified.

For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Composing Room Equipment:

2,287,793. CONTROL MECHANISM FOR AUTOMATIC JUSTIFICATION of right hand margins by a linecasting and composing machine, particularly apparatus for effecting the selective response of such machines to stored signal conditions. The release of fixed spaces to accompany a deficient line is provided without the insertion of special signals particularly associated with the release of fixed space matrices. This is accomplished by perforating an additional code hole or holes whereby the ordinary space band signal is converted into an extraordinary space band signal. The control strip is backed through the perforator until the space band signals to be converted into extraordinary signals are aligned with the punches, and thereafter depressing a key lever assigned to the extraordinary space band signal. Or the additional perforations may be made with a hand punch. No other modifications of the signals on the tape are required. Invented by Maurus T. Goetz, Chicago, Ill. Assigned by mesne assignments to Teletypesetter Corp., a corporation of Delaware. Application December 29, 1939. 23 claims.

2,288,944. CLEANING AND POLISHING DEVICE for removing the oxide stain formed on spacebands used in separating words in a linotype machine. The device consists of a motor-driven buffer-disk arrangement with means for supplying the rubbing compound, preferably graphite, at only a small sector adjacent the spaceband being polished, thereby preventing unnecessary scattering of the graphite. The casting face of the spaceband is kept parallel to the polishing disk under uniform pressure, thereby preventing chattering of the band that may cause wearing-down of spaceband edges and consequent casting-metal leakage. Automatic means are also provided for successively removing spacebands from the polisher magazine after polishing, to a collecting table. Invented by Gerald S. Fuller, Schenectady, N. Y. Unassigned. Application March 9, 1939. 27 claims.

2,288,945. WIPING AND LUBRICATING DEVICE for preventing the initial accumulation of oxide stain to which type metal may adhere on a linotype spaceband. A wiper element holding a wiper such as felt, is pivotally supported on the spaceband box so as to wipe the short sleeves of the spacebands which are most subject to corrosion. Provision is made for supplying and replenishing wiping fluid to the wiper to give correct lubrication, or the wiper itself may be made of carnauba wax and graphite. A tapered wiper face and other considerations add to the device's efficiency. Invented by Gerald S. Fuller, Schenectady, N. Y. Unassigned. Application July 17, 1941. 8 claims.

2,289,557. APPARATUS FOR USE IN REGISTERING FORMS in the composing room as necessary when a single sheet is subjected to a plurality of printing operations. In a form, movable members such as plates, cuts, dies, type matter, etc. are placed on a table or imposing stone. Over the form and parallel with it, a glass plate is suspended and on this glass plate a sheet of paper printed with primary impression or marked with layout positions is placed face down. The apparatus includes a rectangular frame for holding the glass and a transparent reflector suspended parallel between the glass and the form, the whole being in a carriage movable on rollers which, in turn, is on a second carriage also movable but at right angles to the first carriage, thereby permitting any horizontal positioning over the form. Invented by Arthur K. Taylor, Baltimore, Md. Unassigned. Application March 23, 1939. 13 claims.

Feeding, Folding, Delivery:

2,287,768. SMOOTHING IDLER ROLL for machines such as for printing, wrapping, etc., to smooth out continuous webs of thin flexible material prior to the material entering the manipulative section of the machinery. The roll serves to compensate for irregularities and unevenness in the webs without resorting to high tension, thereby causing the web to leave the roll in an even plane. As an example of the roll, one was provided consisting of a steel cone two inches in diameter and thirty inches long having a layer of very soft resilient sponge rubber one inch thick adhered to the cone. The surface of the rubber was cut 7/8 in. deep into blocks ½ in. square by longitudinal and circumferential grooves. Invented by George R. Eckstein, Buffalo, N. Y. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application May 4, 1940. 14 claims.

2,288,523. MACHINE FOR DELIVERING BLANKS, separating them from laterally contiguous longitudinal rows, and stacking the individual blanks of the separated rows into horizontal piles. By laterally tilting each blank in the contiguous longitudinal rows simultaneously with or immediately after severing, the effective horizontal width of the blanks is shortened so that the rows may be initially separated a sufficient distance for proper handling and further separation and delivery in horizontal stacks wherein the individual blanks are vertically disposed. Invented by William F. Grupe, Lyndhurst, and Arthur M. Wickwire, Jr., Mountain Lakes, N. J. Assigned by mesne assignments to Interchemical Corporation, New York, N. Y. 14 claims.

2,288,755. SHEET ASSEMBLING MACHINE for the purpose of assembling flat single sheets which are produced in quantity and then must be gathered into units in their proper page order. Thus the machine is suitable for compiling printed circulars of more than one page, or for arranging top sheets and multiple carbon copy sheets for office forms. The machine is designed either for hand operation by means of a crank, or to be motor driven. It consists of a vertically mounted drum with sheet holders in the form of boxes spaced circumferentially around the drum. Means are provided so that rotation of the drum serves to pick up sheets from the various boxes in turn. Invented by John Taggart, Spokane, Wash. Unassigned. Application May 8, 1941. 9 claims.

2,288,772. FEEDER FOR SHEETS of metal, cardboard, stiff paper, etc., where it is desirable to feed sheets laterally and in a standing position from a supply of such sheets. One application, for instance, would be where the sheets standing on edge are to be conveyed through a drying oven. The apparatus would thereafter deliver the sheets flatwise, in horizontal position, without likelihood of scratching or marring the freshly dried, printed or coated surface of the sheets. This is accomplished, fundamentally, by a pair of transversely spaced endless chains which support between them a large number of racks or wickets against which the sheets may rest. Invented by Leonard Baker, Hillsdale, N. J. and Leo C. Williams and George A. Martin, Pearl River, N. Y. Assigned to Dexter Folder Co., Pearl River, N. Y. Application February 8, 1941. 48 claims.

2,289,010. PRINTER SLOTTER FEED of the type in which box blanks or other relatively thick material as corrugated board or fiber board are fed from the bottom of a

A-Z ALLOY

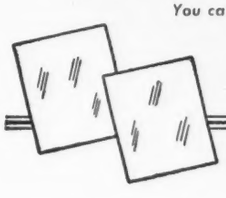
A fine metal for fine screen halftones

Engravers "in-the-know" have been using A-Z Alloy for years in cases where fine screen work on a zinc alloy has been required.

The fine texture of A-Z Alloy, its combination of toughness with smooth, quick etching, its unusual registering qualities, and its ability to stand heat have long been recognized.

Expert engravers know that a zinc alloy cannot produce as fine a cut as copper, but if copper becomes scarce, A-Z Alloy will do a swell job of pinch-hitting and at a price no higher than its well-known team mate, Zomo Electric Zinc.

You can order A-Z Alloy and Zomo Electric Zinc, plain or Backoted, from leading metal suppliers.



ZOMO ELECTRIC ZINC

A-Z ELECTRIC ALLOY

LOOK AT THE RECORD

MERCURY PRODUCTS

MERCURY Rollers and Blankets have through the years proven to be highly effective aids in the economical and efficient production of good printing. Mercury Rollers assure excellent ink distribution under all pressroom conditions. They are perfectly concentric, of just the proper consistency and extremly long-lived. Mercury Blankets have great tensile strength and safest minimum stretch. Surface and plies are oil-resistant. Your satisfaction with Mercury products is guaranteed.

RAPID ROLLER COMPANY

D. M. RAPPORT, Pres. Federal at 26th Street, CHICAGO

stack of blanks and advanced, singly, into the bite of the rollers. The invention permits the reciprocatory feed to be changed from a timing suitable for narrow blanks, to a timing suitable for wider blanks without interferring with adjustment of the machine, and with simpler construction and more uniform operation. An improved mechanism, operable at will, is provided for raising the front end of the entire stack of blanks so as to prevent the reciprocatory feed from taking a new blank, thereby making one or more strokes ineffective and allowing more time for large blanks to be pulled through the rollers. Invented by Henry B. Greenwood, Baltimore County, Md. Assigned to F. X. Hooper Company, Inc., Glen Arm, Md. Application May 17, 1941. 7 claims.

2,289,501. FRICTION STREAM FEEDER which will efficiently handle sheets of widely differing widths, thickness and texture. A rotary feeding element made of rubber, leather, or similar frictional material is brought into contact with the top of the pile of sheets and buckles the top sheet. During the buckling operation, the rear margin of the top sheet is withdrawn from beneath a hold-down member. The forward margin of the sheet is stopped temporarily by means which is released when the buckle is formed to allow the front edge to snap forward. Simultaneously, an air blast is directed downwardly upon the buckled portion of the sheet. The jet of air acts as a "brush" to cause the sheet to straighten out and the front edge to project forward into the bite of the conveyor. Invented by Theodore J. Kauffeld, New York, N. Y. Unassigned. Application September 16, 1941. 16 claims.

2,289,502. FRICTION STREAM FEEDER, which has the same general construction as in 2,289,501, above, but which, in addition to the main face friction buckling member, also has frictional devices for buckling the rear corners of the uppermost sheet. The corners are buckled diagonally inwardly and forwardly, to assist in the complete separation of the sheet from the underlying ones and to break the adhesion caused by electrical attraction or the knitting together of the fibers of the sheets, especially at the sheared edges of the pile. This feature is especially useful in handling thin tissues or sheets of exceptionally large area. Invented by Theodore J. Kauffeld, New York, N. Y. Unassigned. Application September 16, 1941. 20 claims.

2,289,737. ELECTRICAL SIGNALING APPARATUS for indicating the manual adjustments needed to register the moving web of a high speed multi-color printing press. Invention eliminates the third and fourth thyratrons and a complicated timing circuit formerly used. Instead, relays and a timing triode are interconnected with the remaining circuits. Thus two photo-cells, one directed on a target applied to the moving web and the other directed on a target on a rotating element of the press. are included in a simplified circuit which also includes two indicator lamps. One of these lamps indicates when the web is advanced; the other when it is retarded. A diode tube included between the thyratrons limits the amplitude of the pulse impressed upon the latter, so as to simplify initial adjustments. Invented by Morris Sorkin, Teaneck, N. J. Assigned by mesne assignments to Interchemical Corporation, New York, N. Y. Application November 17, 1938. 14 claims.

Miscellaneous:

Reissue 22,133 of 2,167,142. NEW ICE COLORS of good fastness, especially useful in preparing printing pastes for dyeing cotton and cellulosic film and prepared by reacting diazotized cresidine and the anilides of 2:3-hydroxy naphthoic acid. Example of preparing a printing paste: 2 parts of the diazo imino compound obtained by the action of diazotized cresidine on methyl glucamine is mixed with 2 parts of the 2:5-dimethyl-4-chlor-anilide of 2:3 hydroxy naphthoic acid. 4 parts of the mono ethyl ether of ethylene glycol, 24 parts water, 3 parts of 30% sodium hydroxide solution and 65 parts of thickener. The process includes printing of cotton and rayon goods on an engraved roller with this paste, drying, subjecting to steam containing the vapors of acetic acid, rinsing in water, boiling in a soap solution, rinsing again and drying, thereby producing a deep Bordeaux dyeing of good fastness. Invented by Frithjof Zwilgmeyer, Wilmington, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application April 11, 1942. 5 claims.

2,288,200. PROCESS FOR PRODUCTION OF POWDERED WATER-SOLUBLE CELLULOSE ETHERS such as carboxymethyl cellulose, by drying solutions of the cellulose ether compounds in water or aqueous alkalies on cylinders heated to about 100°C., removing the dried product and grinding it. Many such cellulose ethers are used as dressings, sizes, thickeners for printing inks, adhesives, etc. Invented by Georg Meyer, Hanover, Germany. Unassigned. Application May 11, 1938. 3 claims.

2,288,261. METHOD OF TEXTILE PRINTING which involves the use of water-in-lacquer emulsion printing pastes containing vat dyestuffs, the pastes being improved by the addition of small percentages (0.2-1.0%) of phosphatide such as egg lecithin, soya lecithin and synthetic phosphatides made from partial fatty acids of glycerin and phosphoric acid. The added phosphatide is sufficient to retard flushing of the vat dyestuff from the aqueous to the non-aqueous phase. Invented by John Abrams, Jersey City, N. J. Assigned to Interchemical Corporation, New York, N. Y. 4 claims.

2,288,309. IRON BLUE PIGMENT containing substantial percentages of nickel in the form of basic insoluble nickel compounds. It has been discovered that iron blues can be made considerably more alkali resistant by precipitating a basic water insoluble nickel compound on the pigment, using sufficient nickel so that at least 0.1% is precipitated on the pigment. Invented by Edwin A. Wilson, Rutherford, N. J. and Irving Shack, Brooklyn, N. Y. Assigned to Interchemical Corporation, New York, N. Y. 6 claims.

ALL-OUT WITH
IDLE METAL

You can do your share in the All-Out for Victory job of keeping vital metal in circulation. Put the metal in old plates and type forms *to work* instead of allowing it to gather dust and spider-webs in inactive storage files.

Your original investment can be protected in full! Reproduce this material quickly and inexpensively in Wood Ad Mats — ready at all times for casting if reruns are required. Then release the metal. You'll save substantially on storage space, too. Get that inactive metal back into circulation now as your All-Out for Victory contribution!

Remember — **WOOD AD MATS**

A Means for Metal Conservation

WOOD FLONG CORPORATION HOOSICK FALLS, N. Y.

New York City Office: 551 Fifth Avenue

2,288,860. METHOD OF PRODUCING RAISED PRINTING in which two complementary printing plates are used, one plate having its surface in relief and the other having its surface recessed, and the two plates fitting loosely together. Ink of the kind normally used for raised printing, *i. e.*, such as will retain a dusting powder, is applied to the recessed plate and then removed from the flat surface leaving a residue in the recesses. Paper thereafter pressed between the two plates is embossed and simultaneously picks up a coating of ink on its embossings. A suitable powdered material is subsequently dusted on the paper where it adheres to the embossed, inked surface. Invented by Donald M. Wallace, Mountain Lakes, and Russell E. Thompson, Plainfield, N. J. Unassigned. Application June 4, 1940. 4 claims.

2,288,992. TEXTILE PRINTING PASTE which may be obtained by using solutions of cellulose ethers in hydrophylic organic solvents as the continuous phase of the emulsion. Example: Parts by weight. High viscosity benzyl cellulose 2.0; Toluol-41.4; Ethanol-1.6; Pine Oil-15.0; Water-30.0; Rapidogen Red G.S.-Double Sol.-10. Invented by Norman S. Cassel, Ridgewood, N. J. Assigned to Interchemical Corporation, New York, N. Y. 6 claims.

2,289,461. DISCHARGE PRINTING OF CELLULOSE DERIVATIVE FABRICS to produce fabrics discharged to a pure white upon navy blue, black, and deep brown backgrounds. The fabrics are first colored in deep shades by dying with dischargable amino-azo dyestuffs, the latter then being further diazotized to form similar dischargable polyazo dyestuffs on the material. The dyed materials are then treated with novel discharge pastes of the present invention, which comprise an alkali metal thiocyanate, a metal sulfoxylate formaldehyde and a suitable penetrant to produce a pure white discharge. Invented by Victor S. Salvin, George C. Ward, and George W. Seymour, Cumberland, Md. Assigned to Celanese Corp. of America, New York, N. Y. Application February 13, 1940. 2 claims.

2,289,638. PRINTING INK which is intended for treatment with steam immediately after printing, thereby to prevent offsetting. Steam causes the binder to separate from the solvent at the exposed surface only of the printed film resulting in a thin hard layer of resin and permitting the remainder of the film, below the surface, to dry by penetration. Ink contains a varnish, comprises 50-60 parts (by weight) of diethlene glycol or some other liquid polyglycol and 40-50 parts of a synthetic resin, comprising a terpene hydrocarbon of the formula $C_{10}H_{16}$ modified by an alpha beta unsaturated organic polybasic acid such as fumaric or maleic acid. Invention employs a pigment insoluble in the polyglycol or in water. 15-20% of the weight of the varnish of carbon black or 60% of the weight of the varnish of chrome yellow give satisfactory results. Invented by Donald R. Erickson and Paul J. Thoma, Kalamazoo, Mich. Assigned to Michigan Research Laboratories, Inc., Kalamazoo, Mich. Application June 2, 1941. 11 claims.

2,290,128. MANUFACTURE OF POLYHYDRIC ALCOHOL ESTERS of hydroxy and alkoxy substituted acetic acids. According to the invention, a lower alkyl ester of an oxy-substituted acetic acid is reacted with a polyhydric alcohol, by heating under conditions favorable to the interchange of alcohol radicals. This interchange of alcohol radicals is effected by heating the alcohol and ester together in the presence of alkaline alcoholysis catalysts. The ester exchange process may be employed for the preparation of ethylene glycol monoglycolate, etc., which may be used as a substitute for glycerol in printing ink compositions. Invented by Donald J. Loder, Wilmington, and Wilber O. Teeters, Roselle, Del. Assigned to E. I. du Pont de Nemours & Co., Wilmington, Del. Application May 6, 1939. 8 claims.

2,290,132. COMPOSITION which may be used in the manufacture of printing inks and which contains chlorinated rubber and compatible proportions of compatible melamine-formaldehyde resins. The chlorinated rubber is blended with not more than 20% (total solids weight basis) of a melamine-formaldehyde resin which has been alkylated with an alcohol containing 4 to 8 carbon atoms and wherein the molal ratio of formaldehyde to melamine is at least 4:1. Invented by Robert C. Swain, Riverside, and Pierrepont Adams, Stamford, Conn. Assigned to American Cyanamid Co., New York, N. Y. Application October 26, 1940. 4 claims.

2,290,133. ESTER GUM COATING COMPOSITION, produced by blending ester gum with at least 60% (total solids weight basis) of a melamine-formaldehyde resin, which has been alkylated with an alcohol containing at least 2 carbon atoms and wherein the molal ratio of formaldehyde to melamine is at least about 4:1. Composition is claimed to improve printing inks gloss and drying speed. Invented by Robert C. Swain, Riverside, and Pierrepont Adams, Stamford, Conn. Assigned to American Cyanamid Co., New York, N. Y. Application November 8, 1940. 4 claims.

Plate Making:

2,288,020. ALL METAL PRINTING SCREEN in which the protecting or blocking areas are formed of metal, such as aluminum foil, which impregnates a bronze wire screen, and is integrally formed with it, the design being sharply formed through the etching of the metal blocking area without etching of the screen. The screen is formed by impregnating it with aluminum metal foil, the foil being etched through by a mordant which does not attack the bronze screening. It is said that this construction gives the screen a long life, enables sharp reproduction and avoids pinholes. Invented by David B. Noland and Murray L. Loftin, Nashville, Tenn. Unassigned. Application March 27, 1939. 2 claims.

2,288,128. ETCHING MACHINE for photo engraved plates, constructed to provide uniform distribution of the acid or etching solution over the face of the plate and to remove the exhausted etching solution and the etched portions thereby to provide a clean etching of the surface. The machine comprises a tank provided with a movable grill which acts as a plunger and moves vertically. This grill creates currents so that the etching solution is at all times delivered to the face of the plate under pressure as a result of the movement of the plunger downward from the plate, and is drawn away from the face of the plate as a result of the movement of the plunger in the opposite direction. While the plunger is moving vertically the plate is moved horizontally. Invented by Raymond Albert Ers, Detroit, Mich. Unassigned. Application July 24, 1941. 10 claims.

2,288,352. APPARATUS FOR TRANSFERRING A DESIGN or pattern to be reproduced by printing to the sensitized resist covering on the printing plate or cylinder, preparatory to etching. The tendency of the known transfer machines to eliminate, or reduce the size of, all opaque areas in the transparency below a given minimum dimension during the transfer operation, is overcome by the use of a light source and reflecting apparatus so arranged that substantially all of the rays constituting the beam emitted therefrom are prevented from deviating from the axis or normal direction of propagation of the light source by more than a predetermined amount. Invented by Charles L. Henderson, Appleton, Wis. Assigned to Paper Patents Co., Neenah, Wis. Application December 24, 1938. 2 claims.

2,289,480. VACUUM CASTING BOX for casting curved stereotype newspaper printing plates, the casting box having a long life and easy cleaning arrangement. The box comprises a removable core or drag cooperating with a stationary cope or back, both the drag and cope being semi-cylindrical. The cope or back is provided with a removable perforated plate, spaced from the back and sealed so that suction applied to the space between the plate and the back may be applied to the perforated portion of the plate to hold the matrix tightly during casting. The perforations in the plate are enlarged away from the matrix and are equally spaced over the entire surface. The matrix supporting suction member may be removed and

easily cleaned. Invented by Alfons J. Bueltmann, Chicago, Ill. Assigned to The Goss Printing Press Co., Chicago, Ill. Application September 26, 1940. 3 claims.

2,290,010. PRODUCTION OF AN ARCUATE PRINTING PLATE for printing cylinders, which retains many of the advantages of the customary stereotyping process, yet provides for a printing surface with as fine line screen character as desired. This is accomplished by etching the printing surface on a relatively thin metal sheet and thereafter bending the sheet to the desired arc and bending onto its back molten metal to make a rigid curved plate free from stresses. The completed bonded plate may be routed in non-printing areas, if desirable, such routing being impractical when a thin sheet plate was merely fastened to an arcuate precast back. Invented by Samuel B. Anson, Cleveland, Ohio. Assigned to The Cleveland Shopping News Co. Application March 29, 1940. 4 claims.

Printing Presses and Equipment:

2,287,872. PRINTER'S BLANKET, constructed so as to eliminate the hump or bolster at the edge of the cylinder slot. The blanket has an improved hinge construction at a terminal end of the cylinder, which construction utilizes a part of the blanket to form a fabric hinge. The hinged flap extends into the cylinder slot, forming a stronger connection with the pins in the slot than did the fabric flap previously used. Whether the hinge construction is embodied in a top or bottom blanket, the thickness of the blanket is not increased. Invented by John W. Foster, Ridgewood, N. J. Assigned to Tingue, Brown & Co., a corporation of N. Y. Application June 5, 1939. 15 claims.

2,288,129. CONTROL APPARATUS FOR THE DRYING MECHANISM of a web printing machine, which regulates the fuel supply for heating the drying air in accordance with the speed of the web and controls the supply and exhaust of air to and from the drying chamber to prevent ignition of gases given off by the ink. Invented by Cyril P. Feldhausen, Wauwatosa, and Eric H. Laabs, Milwaukee, Wis. Assigned to Cutler-Hammer, Inc., Milwaukee, Wis. Application April 11, 1940. 5 claims.

2,288,174. HIGH SPEED ROTARY PRESS, such as for newspapers, which has improvements in construction from the standpoint of the inking mechanism. Invention confines centrifugally-thrown ink-mist so that it cannot cause damage to the web or outside parts, and yet provides easy access to the fountain regulating keys and other parts of the press. This is accomplished by enclosing covers having conveniently located doors. The covers also allow for application of a special color fountain. Invented by Henry A. Wise Wood, deceased, late of New York, N. Y. and Charles L. Ricards, South Plainfield, N. J. Assigned to Wood Newspaper Machinery Corp., Plainfield, N. J. Application May 31, 1939. 4 claims.

2,288,773. MACHINE FOR APPLYING COLORED COATING to cards such as used by paint manufacturers to indicate shades and colors of paint to consumers. The invention features compactness, easy removability of the color applicators for cleaning, capability of applying to a surface a large number of different and dispersed color coatings of varied thicknesses. Invented by Ove S. R. Beck, Alameda, Calif. Unassigned. Application November 10, 1939. 19 claims.

For Patent Research in the U. S. Patent Office, or a prompt estimate on any type of search, address INVENTION, INC., Barrister Bldg., Washington, D. C.

Mechanical executives are invited to submit to the editor descriptions, photos and/or sketches of ideas developed in their plants for the benefit of other executive readers of *Printing Equipment Engineer*.

BLATCHFORD

THE *Original* HONEYCOMB

BASE

CONSERVATION OF METALS IS YOUR PATRIOTIC DUTY

Case histories prove that use of Blatchford Base will prolong life of electros 25% to 100% when contrasted to wood mounted plates or obsolete forms of metal bases.

And remember:

Blatchford is guaranteed for ten years!
It will last through the "DURATION."

Nothing is more costly than plate-mounting equipment that fails in the "pinches"

E. W. BLATCHFORD CO.

Branch of NATIONAL LEAD CO.

63 PARK ROW, NEW YORK **900 W. 18th STREET, CHICAGO**

Press Care in the Emergency

The Miehle Printing Press & Mfg. Co. recently issued a statement to its customers regarding the care of printing presses for the duration of the war. "Because the manufacture of printing presses," the statement reads, "has come to an end for the duration of the war and because repair parts will undoubtedly become more difficult to secure, we take the liberty of addressing a word of caution to our many customers."

"Printing presses, like automobiles, need periodic attention to keep them running smoothly. Vibration will cause screws, bolts and nuts to loosen and perhaps interfere with the operation of moving parts or cause abnormal wear. Loosened parts may drop out of place and result in serious damage, or register may be affected, "slurs" may appear, or the form may begin to show wear.

"When a press does not respond to the pressman's customary attention, makeready and adjustment, it is advisable to call in a skilled press mechanic.

"It is not possible to state definitely how often a press should be looked over by a competent mechanic. Much depends upon the age of the press, how much and how hard it is operated.

"If the printer will have his presses checked over every six months, he will soon recognize what parts tend to loosen frequently and need attention to avoid wear and trouble.

"On a good foundation, many parts might go for a year or more without needing attention, but under present conditions it is best to play safe.

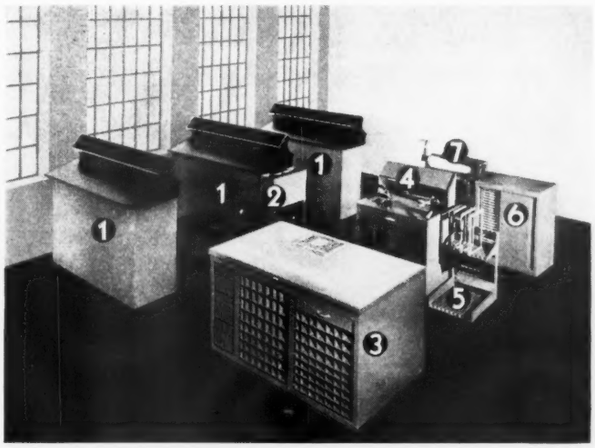
"Parts such as racks, bed motion shoes and air cushion rods should be checked frequently. A loose part on these members can lead to a serious accident. The parts specifically mentioned do not conclude the list by any means, but they happen to be the ones least likely to be observed.

"The important thing is not to expect or assume that everything is going to "stay put" indefinitely.

"When the floor under the press and the press itself are kept reasonably clean, there is more of an incentive for someone to get under the press for a check-up."

10% PROFITS

Ten percent profit on a job means that only six minutes of each hour are profitable minutes. The rest are cost. No wonder many composing rooms lose money when they offer opportunities to waste many times six minutes every hour.



A Well-Balanced Composing Room

Better equipment—Hamilton Equipment—will often stop those wasted minutes by making possible good arrangement and providing compositors with opportunities to work productively all the time.

KEY TO ITEMS ILLUSTRATED ABOVE

1. *Composing Room Cabinets.*
2. *Auxiliary Cabinet.*
3. *Imposing Tables.*
4. *Work Bench and Storage Cabinet.*
5. *Chase Racks.*
6. *Cut Storage Cabinets.*
7. *Proof Press.*

Ask your Hamilton dealer today to help you put your composing room in condition for maximum production and profit.

Hamilton MANUFACTURING COMPANY
TWO RIVERS, WISCONSIN

HAMILTON
PRINTING PLANT EQUIPMENT

MOLD COOLERS

A QUANTITY OF THESE ARE STILL available to the trade; No further stock will be manufactured for the duration.

These Model B Blowers consist of a 1/8 H. P. motor attached to a blower housing, a flexible metal tube and a nozzle. The equipment takes about a square foot of space underneath the keyboard, on the floor. The nozzle directs a blast of air behind the mold disk. The volume of air can be controlled at will.

When we originated this system of mold cooling a number of years ago, it introduced a most satisfactory method of keeping slugs solid—and increasing production on the heavier sizes, particularly.

A great number of our customers have purchased this equipment over a period of years.

Available in A. C. Current only, $45.00

YOU STILL CAN HAVE ACE BELTS ON YOUR MACHINES

Precision TRADE ★ MARK Parts

LINOTYPE PARTS COMPANY

WEATHERLY, PA.
(Factory and Main Office)

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314 West 10th St.

NEW YORK	203 Lafayette St.
CHICAGO	318 W. Randolph St.
MINNEAPOLIS	503 Fourth Ave., South
DENVER	1441 Blake St.

CHALLENGE
MEETS CHALLENGE

★ Everything we have and hold dear has been challenged! Our foes believe they can crush us before we can produce enough planes, tanks, guns, and ships to stop them.

American industry has accepted this challenge; and as one cog in a mighty machine, The Challenge Machinery Company is going full tilt to supply precision equipment needed by builders of aircraft, ordnance, and other war materiel.

That must come first! But it cannot blackout a half-century of business relations in the graphic arts field.

For the duration, Challenge will do everything possible to maintain its service to customers and dealers—to furnish necessary replacement parts—and to deliver essential equipment to American printers, publishers, typesetters, and binders. All emergencies will be met as quickly and completely as conditions will permit. Meanwhile, engineering development will continue to devise improved products for the future.

423

THE CHALLENGE MACHINERY CO.

Main Office and Factory: GRAND HAVEN, MICH.

Challenge

Eastern Sales Office: 50 Church Street, NEW YORK

47%

To sell more than 47% of all the type metal used by the daily newspapers in the United States is in itself no mean achievement. This accomplishment by the Imperial Type Metal Company over the years has been made possible through supplying a dependable metal, rendering intelligent service to our customers, and through the introduction of special features such as the Imperial Plus Plan, metal fluxes, the use of dross drums, periodical metal analysis, etc. Even in these trying times, Imperial service continues. Now, more than ever before, it will pay any production or mechanical executive to stick to Imperial. If your plant is not "Imperialized," better switch to Imperial now.

Serving the Printing Industry Only

IMPERIAL TYPE METAL CO.

PHILADELPHIA NEW YORK CHICAGO

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HAMMOND

OUR WAR JOB

As builders of machine tools for our country's War Plants all of our efforts are now directed to producing as many machines as possible in the shortest space of time.

GLIDER AND MERCURY TRIMOSAWS *Still Available*

A small stock of Glider and Mercury TrimOsaws is still available. By applying to the War Production Board on form PD-1 A, one of these machines may be made available to you. Full information regarding this can be promptly had by writing us. Write today.

Hammond Machinery Builders INC.

1604 DOUGLAS AVENUE • KALAMAZOO • MICHIGAN
EASTERN BRANCH - 71 WEST 23RD STREET, NEW YORK CITY

HAMMOND MERCURY TRIMOSAW

Loose Pulley Oiler

For use on loose and idler pulleys, clutches, eccentrics, and smilar rotating parts, a new wick type lubricator has been announced by the Oil-Rite Corporation. It is designed to deliver a constant, positive, and regulated amount of filtered oil to shaft or bearing while pulley is in operation, and to prevent oil waste when pulley is idle. The reserve supply of oil is always visible.

This new Oil-Rite Loose Pulley Lubricator consists of a simple glass oil reservoir, mounted on a hollow metal stem. This stem is sealed from the oil in the reservoir, except for two small ports at the very top. Inside the stem is a cylindrical felt wick, which extends through the pulley hub to rest directly on the shaft. A compression spring is wrapped around the wick to hold it firmly in position against the shaft.

As the pulley rotates, and the lubricator with it, centrifugal force throws the oil against the top of the reservoir, and into the two ports in the stem. These admit oil to the wick, which filters out all dirt and sediment, and conducts the oil directly to the face of the shaft.

View of Oil Rite Loose Pulley Lubricator. This device delivers constant amount of oil to the shaft while pulley is in operation.

Change of Company Name

At a special meeting of common stockholders set for July 21, a vote will be taken to determine whether or not the name of Hygrade Sylvania Corporation will be changed to Sylvania Products, Inc. The change has been approved by the officers and directors of the company. The change of name is described as a step in the company's long-term program in preparation for post-war developments.

Recent Linotype Installations

The current issue of the *Linotype News* reports that eight Linotypes, including three Master Model 31s and two Super-Display Mixer Model 35s, have been added by Poughkeepsie Newspapers, Inc., of Poughkeepsie, N. Y.; three Linotypes, two of them Master Model 31s, by the *News-Journal* Company of Wilmington, Del., and two Linotypes each by the Newspaper Printing Corporation of Nashville; Lenz & Riecker, Inc., and the F. & D. Printing Company, Inc., both of New York, N. Y.; the Merrill & Webber Company of Auburn, Maine, and the Machine Composition Company of Philadelphia.

Halftone Black Demonstrator

The *American Halftone Black Demonstrator* is published by American Printing Ink Company to show the importance of screen in halftone work. A variety of screen printings ranging from 85 to 133 are presented on Nos. 1 and 2 Coated, Dull Coated and Machine Coated papers. Seven halftone blacks on nine grades of commonly used stocks show the results that may be expected, dependent upon screen, ink and paper used.

The specimen sheets, approx. 6 in. by 9 in., are contained within a slip case. Die cutting at one end of each sheet indicates the classification of paper.

A copy of the Demonstrator is available upon written request to American Printing Ink Co., Div. General Printing Ink Corporation, 2314 W. Kinzie St., Chicago, Ill.

TECHNICAL LITERATURE

Production and Mechanical Executives wishing to secure copies of the literature described below may do so by addressing the manufacturer direct, or by sending request to Printing Equipment Engineer. *We'll be glad to pass your request on to the manufacturer. Literature is gratis except where noted.*

"I Am an American"

Simply but tastefully designed by Art Director Sol Hess Lanston Monotype Machine Company has reprinted in colors an editorial from the New York *Times*, entitled *I Am an American*, in brochure form. A limited number of the four page brochures are available to those requesting them from the Lanston Monotype Machine Company direct.

Story of Printing Inks

The Story of Printing Inks is a 24 page, 4 in. by 5 in. illustrated booklet, printed in black and red ink. The text in the booklet is an entertaining story about ink-making from earliest times to the present. Such questions as "How old is the art of ink making?" and "How were early printing inks made?" are answered. An interesting story entitled "Color Then and Today" is included. Copies of the booklet may be obtained from General Printing Ink Corporation, 100 Sixth Ave., New York, N. Y.

How To Grease Ball-Bearing Motors

General Electric Company has published a well illustrated 16 page and cover booklet, 5¼ in. by 7¾ in., entitled *How To Grease Ball-Bearing Motors* by means of the G-E Pressure-Relief System. The booklet has been identified by the symbol: GEJ-942A. Please accompany your request with it. Instructions for lubricating motors have been meticulously prepared. Proper types of grease and data on cleaning ball bearings also are given.

Beryllium Copper Alloy Bearings

Miniature Precision Bearings of Keene, N. H., has published an illustrated folder describing the company's new line of non-magnetic radial and pivot bearings for application where a magnetic bearing would introduce instrument variations, to avoid electrical conductivity, or to resist salt spray vapor or other mold corrosives. The new Nos. 4 and 5 Radial Bearings and the No. 3P Pivot Bearings are now available in this material. In the non-magnetic series, the races and balls are manufactured of Berylco No. 25, a beryllium copper alloy by heat treatment to approx. 40 Rockwell.

Poster Booklet

The McCandlish Lithograph Corporation, Roberts Avenue and Stokley Street, Philadelphia, has just completed a reprint of its booklet, *The Making of a 24-Sheet Poster*. The reprinted booklet tells a running pictorial story of the making of a 24-sheet poster from the original idea by the creative artist to the posting of the completed poster on the outdoor panels. The booklet contains considerable data for artists and production managers covering the designing of 24-sheet posters. The booklet will be supplied to anyone requesting it from the McCandlish Lithograph Corporation.

foresight...

Long before war curtailments of certain essential materials became a challenge to the ink industry, Huber chemists were anticipating . . . *and solving* . . . many of the problems of substitution.

As a result, Huber is maintaining . . . *right now* . . . inks and service of virtually pre-war standard.

In these days when reliability counts, learn to rely on Huber.

J. M. Huber, Inc., New York, Chicago, St. Louis, Boston.

HUBER PRODUCTS IN USE SINCE 1780

HUBER INKS

Neal Dow Becker, president of Intertype Corporation, has been elected president of the Commerce and Industry Association of New York, Inc. This is the largest association of business men in New York City, having been founded forty-five years ago as the Merchants Association of New York. Mr. Becker has been a director for some years.

Tenth Anniversary

In observance of the tenth anniversary of the founding of the St. Petersburg (Fla.) Printing Co., Inc., Manager Ben Granger has published a French fold, 9 in. by 12 in. folder. In the folder appreciation is expressed to all of the company's customers, suppliers of materials, trade journals and members of the company's business family for their confidence, loyalty, cooperation and friendship.

A bright design appears on page 1 of the folder, and is printed in red and blue diagonal bands with company mark in the center. The entire folder composes a most appropriate printed message.

Timken Promotions

Promotions in the publicity and advertising department of The Timken Roller Bearing Company were announced today by Roland P. Kelley, Director of Advertising and Sales Promotion.

Worthing H. Stone becomes Assistant Advertising Manager and is to be in charge of advertising for the Railroad, Farm Implement, Automotive and Rock Bit Divisions of the Company.

S. L. Huffman, a member of the advertising staff for several years, has been advanced to Manager of the News Bureau where he will be responsible both for general publicity and technical articles for the industrial press, in addition to continuing his present duties of handling the advertising of the Steel and Tube Division.

Peter C. Poss continues his present activities as Assistant Advertising Manager, supervising the buying of publication space and printing; and in addition will take over the publishing of technical information for the engineering fraternity.

NOW
LET'S TALK ABOUT
A REAL KNIFE!
Did you ever use a special alloy paper cutting knife that *really* holds an edge . . . that *really* has a temper that doesn't draw under the heat of fast feeding . . . that *really* has the toughness to resist shock at its worst?
SWW knives will give you more keen, quick cuts between grinds. And when grinding is necessary, they take on another of those amazing edges that have made the trademark SWW a welcome sight to thousands of printers.
Give a *real* knife a chance . . . specify SWW.
SWW
S. W. W. PAPER CUTTING KNIVES
SIMONDS WORDEN WHITE CO.
DAYTON, OHIO

More and more
THE PRINTING INDUSTRY IS FINDING IT PAYS TO –
Buy AMERICAN
Products of
BETTER ROLLERS
There's no guesswork about the performance of AMERICAN ROLLERS because there is no mere "rule of thumb" anywhere in their manufacture. Their making is scientifically controlled from start to finish. They're engineered to give better performance . . . factory conditioned for extra durability. And the resultant difference . . . the evident superiority shows up plainly on your presses. Try out a set and see for yourself. Order today.
We also manufacture
ALL-SYNTHETIC RUBBER ROLLERS
For Letterpress, Offset and Newspaper Work
the Most Skilled Craftsmen in the Business
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1342 M. HALSTED STREET CHICAGO, ILLINOIS
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225 N. New Jersey St., Indianapolis, Ind.
1531 Branch Street St. Louis, Mo.

Miller Pinch Hits

Everett Miller, who has been covering Southern territory for Linotype Parts Company, is now pinchhitting in the states of Ohio, West Virginia and part of Pennsylvania, for Charles Lawrence for the duration. Mr. Lawrence entered the armed service recently. Mr. Miller will also continue to cover his Southern territory.

Mawson Passes On

Eddie Mawson, who for more than 40 years was head of the Lanston Monotype Machine Company's instruction school, died at his home in Hammonton, New York, on July 14. He was 76 years of age. Funeral services were held from the Mawson home in Hammonton on July 17.

It has been said that Mr. Mawson put more than 10,000 prospective Monotype keyboard and casting machine operators through the instruction courses. He was universally liked. Many father and son combinations received instruction from him and in at least one instance, he taught three generations of students in one family.

Cromwell Plant Enlarged Recently

Within recent months, The Cromwell Paper Company, Chicago, has put into full operation a new building which considerably enlarges the plant. This modern structure now occupies a space of 410 ft. by 275 ft. at Whipple and Forty-Eighth Streets. In addition, the company operates a plant in Brooklyn, New York, consisting of about 30,000 sq. ft. of floor space. The new building increases the plant's output of tympan papers and paper products considerably, including waterproof wrapping papers, hand made, semi-hand made and machine made bags. The Cromwell Paper Company is headed by Mr. J. Weil.

Shipping Container for Scrap Metal

Imperial Type Metal Company is furnishing a container to printing and photo-engraving plants in which may be packed approx. 300 lbs. of scrap plate metals for shipment to the company. The container is distinguished from the

usual steel drums in which type metal dross is shipped to the company.

The container shown in the illustration is constructed from heavily reinforced corrugated board and measures 25 in. wide by 19¼ in. by 13¼ in. deep. A length of rope sufficient to hold the upper and lower sections together securely is fastened inside the cover of the box.

TYPE METALS NEED "VITAMINS" TOO

Even the sturdiest of type metals cannot go on forever without a little encouragement. The endless round trips between the metal pot and melting furnace are bound to take a bit of starch out of the backbone of any metal. So, to keep its metals "in the pink," Blatchford maintains for its customers a testing and replacement service.

It works like this: The printer periodically sends a sample of his metal to Blatchford for analysis and a "health" report. If the metal isn't up to snuff, Blatchford prescribes the proper amount of toning metal to add in remelting.

It's a sure-fire way to keep the metal healthy — and the printer happy. Why not get the facts now?

E. W. BLATCHFORD, CO. • 93 PARK ROW • NEW YORK
NATIONAL LEAD CO. • 900 W. 18TH ST. • CHICAGO

LINOTYPE
MONOTYPE
INTERTYPE
LUDLOW
TYPE CASTER
STEREOTYPE

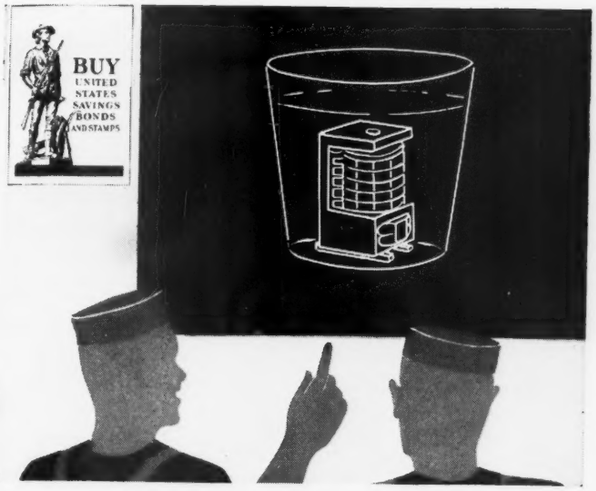
Blatchford METAL

Try For Die-Cutting

In previous issues, *Printing Equipment Engineer* has discussed the idea of printing plant executives responding to WPB'S suggestion that printing plants be partially converted to work intimately associated with the war effort. It is admitted by Deputy Chief E. W. Palmer of the Printing and Publishing Branch that the conversion potential of printing plants is rather low. Yet, there are many larger plants who no doubt have responded to the idea.

While die-cutting operations with regular press equipment has been suggested in previous issues, we are glad to see a manufacturer suggesting in this issue that printing executives call on plants doing war work in their own communities to see if they can secure war items requiring die-cut packages for fuses, cartridges, shells and other materials.

It may be true that the field has been covered rather thoroughly by this time, but it seems that printing plant executives, in line with suggestions of J. A. Richards, could at least try for this type of work in case they haven't given it previous active consideration.



THE KID STILL LEARNS ABOUT
NUMBERING FOR PROFIT

- "What did you do with those numbering machines after you cleaned them?"

★ "I put them in kerosene."

- "Just dump them in?"

★ "Nope—set them on a couple of pieces of old 72-pt. to keep them off the bottom."

- "Why?"

★ "So the dirt, ink and junk could settle."

- "Where did you learn that?"

★ "From the Wetter book."

- "What book?"

★ "It's called Numbering for Profit."

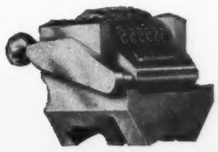
- "What else have you learned?"

★ "That I can get along on what's left after I put 10% of my salary into U. S. War Bonds."

- "Good boy!"

★"Good buy!"

Wetter Lock-Wheel
One of many models



Wetter Rotary
One of many models

WETTER NUMBERING MACHINE CO.
ATLANTIC AVE. & LOGAN ST., BROOKLYN, N. Y.
Sold by all dealers and branches
AMERICAN TYPE FOUNDERS

E-2699

ZINK CUT CEMENT PRICES in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

Just REMEMBER This:

In our last advertisement we discussed getting rid of unnecessary production worries. Competent executives try to do this at all times.

Now, we want to impress upon mechanical executives that you should also eliminate waste motion so far as possible by adopting every means available—no matter how unimportant they may seem to you.

Booth's Zink Cut Cement is a great help in conserving cut-mounting time. With it, cuts are placed exactly as indicated in the layout. Cuts don't become lost, either, when this cement is used.

Booth's Black Rubber Rolls—For line-casting machine keyboards. We want you to try them if you haven't already done so. Trial pair, $1.45. By the dozen, $7.75 including excise tax.

In addition to the A-10 Rating Under Preference Rating Order P-100 for Repair, Maintenance and Operating Supplies on your purchase orders for our products, also please add the symbol DP-17.10 to conform with WPB'S Priorities Regulation No. 10.

THE E. A. BOOTH
RUBBER COMPANY
364 ROCKEFELLER BUILDING • CLEVELAND, OHIO

Identification Label

Photo-engravers using Triplemetal in making cuts are being supplied with a special sticker by The Edes Manufacturing Company. These stickers are attached to finished Triplemetal engravings before being sent to the customer so they can be identified by the customer as being made from Triplemetal

The labels are printed in red and blue ink on white paper. They are gummed on one section so they can be attached to the side of the mounting block with the printed portion extending over the printing surface of the cut and can be removed readily before locking in the form.

A large "V" is superimposed in red ink upon the blue lettering which in part is as follows:

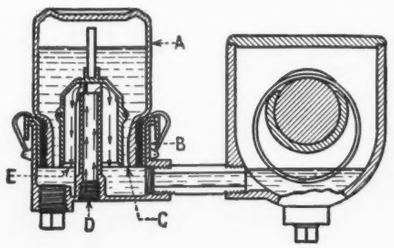
"This plate is etched in Triplemetal, a special alloy developed to hold fine lines and screens, to give service on long runs, and to stand up under matrix making pressure. Its use releases copper for essential purposes . . ."

Constant Level Lubricator

The Oil-Rite Constant Level Lubricator is used on electric motors, pillow blocks, textile and paper making machinery, pumps, air conditioning equipment, ventilating fans, gear boxes—wherever bearings and other machinery parts must be provided with an ample supply of lubrication.

It holds a visible reserve supply of oil—releases automatically just as much as is needed to maintain a constant predetermined level of lubricant. Its use is said to (1) insure adequate lubrication at all times and (2) prevent oil waste, and the deterioration or spoilage of material caused by oil throw.

Construction of the Oil-Rite Lubricator consists of only three simple parts. The base is cast of Zamak metal, with an



integral open air vent which extends part way up into the oil reservoir. Over this vent is fitted loosely an inverted bucket, or bell, also cast of Zamak metal. The reservoir proper is a glass dome, sealed to a metal collar by plastic porcelain cement which is impervious to acids, oils, water and heat. Two spring clips lock the oil reservoir in position. A felt gasket around the outside of the bell seats against the narrower neck of the glass dome when the reservoir is removed.

When the reservoir (A) in the accompanying diagram is filled and inverted into position on the base (B), the lower edge (E) of the inverted bucket or bell determines the oil level which the lubricator will maintain. When the level falls below this point, air from the vent (D) escapes under the side of the bell—as at (C)—up to the top of the lubricator, permitting oil to flow down until the level to be maintained again seals across the base of the bell.

These Lubricators are available in four sizes, with capacities of 2, 4, 8, and 16 ozs. Outlet tappings are provided at both side and bottom of base, and oil level to be maintained is clearly indicated. Complete details will be furnished by Oil Rite Corporation direct or in care of *Printing Equipment Engineer.*

Victory Label

A triangular "Victory" label is being affixed to all naval ordnance and other war material produced by The Goss Printing Press Company, Chicago. This label is also pasted on walls and equipment throughout the plant, as well as on windshields of company trucks and employees' automobiles.

The design for the label was conceived by John Rickert, a precision grinder operator in the Goss plant. The slogan on the label is "The Goss Navy 'E'—Don't Let It Down", an adaptation of the slogan submitted by Rickert in a company contest. In addition to the slogan, the label shows the firm's All-Navy "E" burgee with one white star, the "V" for Victory, and the familiar Morse code symbol. The colors are navy blue and gray on white.

REPLACE
OBSOLETE PROOF PRESSES
with No. 4 VANDERCOOKS

Proof presses for replacement and definite need may be purchased.

The No. 4 Vandercook Proving Machines take forms 14" x 18". They have power ink distribution, automatic grippers, micrometer guides, and many features of the most expensive photo-engraver's proving machines.

No. 4 Vandercooks are recommended for reproduction proofs and for premakeready. They can be used for fine black and white or color printing. They will meet every proving requirement within their size range.

Check your needs while replacement is still possible, and write for complete information now. There is no obligation to you.

Built early in 1941. All Vandercook facilities now engaged with War Production.

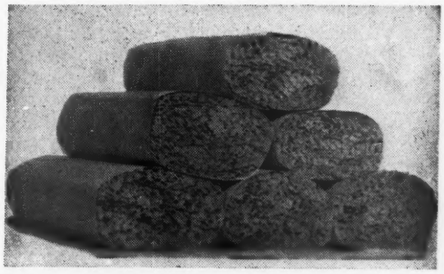
VANDERCOOK
PROOF PRESSES • BLOCK LEVELLERS • HACKER GAUGES

VANDERCOOK & SONS, Main Office and Plant, 900 N. Kilpatrick Ave., Chicago
Eastern Branch: 216 East 45th St., New York - Canada: Sears Limited, Toronto

If you've never tried it

SEND FOR SAMPLE

"FLECTO" Gummed Backing Felt



Porosity permits quick escape of steam — glue coat prevents slipping or leaving matrix under heat. Adhesive does not crack, peel, or crystallize. Gauges .021, .025, .030, and .035 in sheets 18"x 24" also gauges .040, .045, .050, and .060 in sheets 18"x 22"— no charge for strip cutting.

"TRUE-MOLD" CORK MOLDING BLANKETS

Sets match in weight and density, give better molding. Uniform density throughout gives "TRUE-MOLDING" over entire form surface. We furnish hard and extra-hard (special) blankets.

EASTERN NEWSPAPER SUPPLY

9603 Northern Boulevard Corona, New York

Cut your fuel, time and labor costs

The Little Chief

GAS OR ELECTRIC

REMELTER

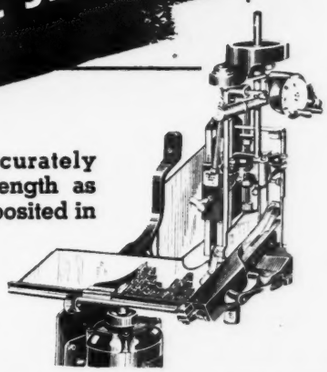
Built for continuous operation, this Little Chief can remelt as much as 3000 lbs. of slugs in 8 hours. With this Remelter one man can perform several duties. It is self-feeding through a hopper* which holds a full charge of slugs or type. An insulated pot conserves the heat, a Jordan internal valve* prevents freezing, a Spillway prevents pot from running over, a Quick-heat muffler* reduces drossage, an Exhaust head* expells the fumes into the flue. The heat is thermostatically controlled. Internal lighting permits efficient skimming. *Write to us for illustrated catalogue.*

*Patented

United American Metals Corp'n

200 Diamond Street, Brooklyn, N. Y., 4101 Curtis Avenue, Baltimore, Md.
2246 W. Hubbard Street, Chicago, Ill.
785 Bryant Street, San Francisco, Cal., 2448 E. 25th St., Los Angeles, Cal.

100% AUTOMATIC SLUG SAWING



Odd-measure slugs accurately sawed to the desired length as they are ejected, and deposited in the galley ready for immediate use. It's automatic — 100%. Just a turn of the dial gives you the exact measure you want. No hand-sawing — no extra handling. Used by progressive composing rooms everywhere.

ECONOMY - EFFICIENCY ACCURACY

MOHR SAW

MOHR LINO-SAW CO.

122 N. Union Street, Chicago

Your old printing machinery can be scrapped advantageously under the . . .

miller

WARTIME SCRAP ALLOWANCE PLAN

FOR FULL DETAILS, WRITE

MILLER PRINTING MACHINERY CO.

PITTSBURGH, PA.

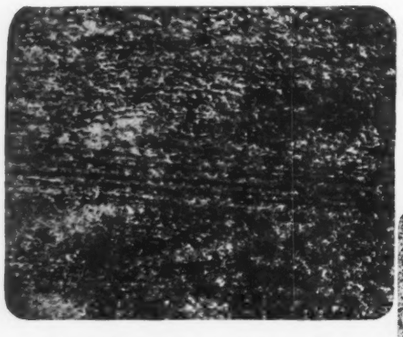
Improved Monotype Held in Abeyance

In his recent report to stockholders, President Harvey D. Best of the Lanston Monotype Machine Company states that the Company's engineering department has completed experimental parts covering major improvements in the present model Monotype composing-casting machine and keyboard.

"These improvements," it is stated by Mr. Best, "provide greatly increased flexibility and efficient operation in customer plants. Two experimental machines are now in operation on commercial work in a customer plant.

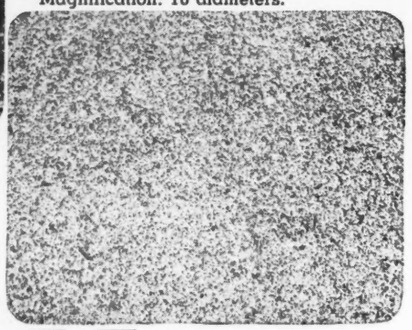
"Materials are in hand and practically all necessary tools to permit building the new units into new machines in manufacture, but because of conversion of the plant entirely to war work, other than the furnishing of supplies and replacement parts to existing customers, nothing further can be done to make the new improvements available to the printing trade until war work demands permit.

"It is estimated that particularly on technical book and intricate tabular work these improvements will increase the output of our machines by some 20% to 30% and that in all classes of work there will be a substantial increase in machine productivity."



Photograph of surface of ordinary zinc after deep etching in engraver's etching machine. Note grain. Magnification: 10 diameters.

Photograph of surface of Edes Triplemetal after deep etching in engraver's etching machine. Note absence of grain. Magnification: 10 diameters.



MICRO-FACTS about EDES TRIPLEMETAL

The metallurgist's microscope and the etcher's actual processes bring out an all-embracing fact—Triplemetal has what it takes to do a fine job! This tough alloy plate etches rapidly, smoothly and evenly. Its fine grain assures the holding of fine detail in halftones up to 150 screen, stands up under hard service in electrotyping, stereotyping, mat molding and long press runs, gives long service in signature cuts and logotypes. Because it does these things in a way that makes it useful on jobs heretofore confined to zinc, copper and brass—does them quickly and economically and dependably—it is earning an important place in modern photoengraving.

Metal in the average shop is about 3% of the total engraved plate cost. There is little saving in "bargain" metal. In the case of Triplemetal, the best is not costly—since its cost is approximately half that of copper. Ask our dealer for a sample.

EDES ENGRAVING METALS
Regular Zinc
Hard Matrix Zinc
Triplemetal
Copper
Brass
Gravure Sheets

THE EDES MANUFACTURING COMPANY
PLYMOUTH, MASS.

AUTHORIZED REPRESENTATIVES

CHICAGO: Chemco Photoproducts Co.
NEW ORLEANS: Chemco Photoproducts Co.
ST. LOUIS: Mid-West Photo-Eng. Supply Co.
WASHINGTON, D. C.: E. H. Walker Supply Co.
RICHMOND, VA.: E. H. Walker Supply Co.
BOSTON: Allan B. Croke Co.
BUFFALO: C. S. Illingworth
DETROIT: Eaton-Clark Co.
CINCINNATI: G. C. Dom Supply Co.
AKRON: Metzger Photo Supply Co.
SAN FRANCISCO: J. W. Feinstein
ATLANTA: Chemco Photoproducts Co.
DENVER MINNEAPOLIS OKLAHOMA CITY TULSA WICHITA MEMPHIS OMAHA KANSAS CITY DES MOINES HOUSTON SAN ANTONIO DALLAS } Thompson-Hayward Chemical Co.

USE of Shellac in Photoengraving

Several of our readers were confused as to the meaning of a sentence appearing in the article, *Technical Suggestions for Photo-engraving Industry*, page 21, May issue of *Printing Equipment Engineer*. The sentence read as follows:

"Shellac use has been curtailed to 35% although this has not affected photoengraving as yet, as most enamel manufacturers and shops cooking their own enamel have enough material on hand for six months to a year or more."

According to the statement of George A. Renard of the Printing and Publishing Branch of WPB published in the June issue "Shellac Order M-106 provides that to June 30, 1942, shellac may be used up to 75% of 1941 rate of consumption . . . *and thereafter not over 35% of 1941 usage.*"

It was not intended by the author of the article in our May issue to convey that if a photo-engraver had on hand a large quantity of shellac it would not be necessary for him to observe the provisions of Order M-106. The author states provisions of the order apply only to the *use* of shellac irrespective of the quantity an engraver may have on hand. This comment is being printed in response to inquiries from several readers.

BOOKS
RECEIVED

1940 Index to Graphic Arts Periodical Literature

IN order to make it available to all those interested, the Educational Commission of the International Craftsmen's Association has sponsored publication in supplement form in *Share Your Knowledge Review*. R. Randolph Karch's *Index to Graphic Arts Periodical Literature*, and now the *Index* (complete up to and including the year 1940) has been published in permanent cloth-bound reference form.

Originally, Mr. Karch kept the index on a single set of 3x5 cards. Consequently, consultation of the index was restricted to those residing in the same city with Mr. Karch, or perhaps to those who could make arrangements with him for such purpose while visiting in that city.

The printing of the *Index* in supplement form in *Share Your Knowledge Review*, as well as the present bound volume, has been sponsored by International officials so that widest possible use of the Index may be made by members of the Graphic Arts Industry in general.

While the criticism may be made that all of the important technical articles appearing in trade magazines may not have been included in the compilation, yet we feel that scanning some 50-odd publications monthly is a tremendous activity. Chairman Karch of the Research Commission, who undoubtedly did the major part, if not all, of the Index work is to be congratulated upon having got-

MODEL "F"

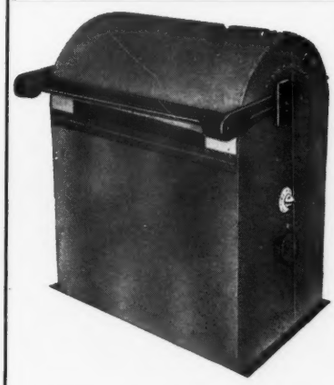
Flat Form O Scorch

Direct Heat

Thermostatic Control

Flexible Cover
230 Volts AC or DC

Price $120
f.o.b. Lynn, Mass.



MODEL "E"

Curved Form O Scorch

Direct Heat

Thermostatic Control

Adjustable Tension on Cover

Self Conforming Cover

AC - 220 volts . . . $150
DC - 200 volts . . . $175
f.o.b. Lynn, Mass.

AMERICAN PUBLISHERS SUPPLY

17 STEWART ST. LYNN, MASS.

. . . YOU WILL NEVER KNOW

— that the heart of a line-composing machine is in reality its motor, and unless you install a Cushman Offset Motor, you will never experience the increased hourly efficiency that a switch to this dependable motor can give you. In these wartimes, particularly, you need all the efficiency you can get from your machines.

Replace that old motor with a Cushman today! The saving in current consumption, plus its efficiency, will soon pay for the motor. Please remember that the Cushman costs no more than other motors. Write today for prices.

CUSHMAN ELECTRIC CO.

69 South Main Street • • CONCORD, N. H.

THE CUSHMAN OFFSET MOTOR

TRAINED PRINTERS ARE IN DEMAND

Printers Help Wanted

Ad compositor for daily newspaper. Knowledge of typefaces, layout and production procedure important. Salary attractive. Apply to . . .

10,000 skilled men are lost yearly by various causes, less than half of this number are being adequately trained. The industry invites applicants for training. It has helped to organize and is giving its support to the individualized course offered by this leading school.

PRACTICAL TRAINING IN *Publishing and Printing*

Advanced instruction in every phase of printing, guided by instructors with practical experience. Actual production practice under conditions encountered in printing and publishing plants.

Investigate!—For detailed information, write to the DEPARTMENT OF PUBLISHING AND PRINTING.

Rochester ATHENAEUM and MECHANICS INSTITUTE

• ROCHESTER NEW YORK •

Men

AS WELL AS

Metal

NEED A COOL WORKING

Mat

• Hot operation increases dross losses and depletes precious tin in your metal supply. It is also a severe tax on overstrained man power. So, particularly these August days, there is a cheer for Certified Mats, that cast at lower temperatures.

For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

CERTIFIED DRY MAT CORPORATION

9 Rockefeller Plaza, Dept. M, New York, N. Y.

Certified DRY MATS

Greetings to our Many Craftsmen Friends

CHICAGO ROLLERS

CHICAGO ROLLER CO.
PRINTERS BLDG.
732 Sherman Street
CHICAGO, ILL.

"The Longer You Use 'em The Better You'll Like 'em"

ten together a reference work running into 110 pages in the present volume.

Although it may be an exceptional illustration of the value of Mr. Karch's *Index*, need for it occurred in Chicago recently at the time of the ANPA Mechanical Conference at which Composing Room Superintendent C. Frank Mann of the Louisville (Ky.) *Courier-Journal* and *Times* was scheduled to discuss the human element in the composing room.

Mr. Mann remembered having contributed an article to *Printing Equipment Engineer*, some time ago, and wished to refer to it in speaking to the mechanical executives at the Conference. The article was entitled *Human Element in the Composing Room*. An appeal was made to Douglas C. McMurtrie of the Ludlow Typograph Company, who is also Chairman of the Educational Commission of the International Craftsmen's Association. Could Mr. McMurtrie help determine the exact date of publication? Upon examining the Index, it was found that the article appeared in the June 1940 issue. Within a very short time, a copy of *Printing Equipment Engineer* containing the article was delivered by messenger to Mr. Mann at the Drake Hotel where the conference was being held.

1940 Index to Graphic Arts Periodical Literature—Compiled by R. Randolph Karch, Chairman of the Research Commission, and sponsored by the Educational Commission, International Craftsmen's Association. Size, 6 in. by 9 in., 110 pages, bound in gold-stamped green cloth. Copies may be secured through the Educational Commission, International Association of Printing House Craftsmen, 950 Michigan Ave., Chicago, Ill. The Commission is arranging for sale of the book.

Color, Roto and Advertising

(Continued from Page 24)

agency. If the agency will use first quality direct pressure baked mats and if the shrinkage is watched, the mats will be satisfactory for newspaper reproduction. "Rolled mats," he observed, "just won't get results."

Suggestions For Improving Printing

The agency men present wanted to know what they could do to help maintain or improve newspaper printing in the present emergency. Chairman Park suggested that straight carbon black ink

Fine PRINTERS
SELECT THE
C&G No. 3-A SAW TRIMMER

Printer-craftsmen find in the C&G No. 3-A SAW TRIMMER versatility and accuracy without sacrifice of efficiency.

A new circular describes in detail the Positive Work Holder, Any Angle Gauge, Balanced Saw Arbor with Automatic Indexing, Roller Bearing Gauge, patented Universal Saw Blades with Saw Grinding Attachment, and many other exclusive features. A copy will be sent at your request, without obligation.

Write today

MILWAUKEE SAW TRIMMER CORP.
610 EAST CLYBOURN STREET, MILWAUKEE, WISCONSIN

Safety PLUS *Efficiency*

with JUSTRITE *Safety* CANS

Here's the safe, sensible way to store and handle benzine and other 'flammable liquids. Trigger handle keeps spout closed except when pouring . . . stops leakage and evaporation. Built to last for years. Body of heavy lead-coated steel, double seamed and soldered. Red baked enamel finish. Made in 7 sizes from 1 pint to 5 gallons.

Ask your supplier or write for catalog and prices

Approved by Underwriters' Laboratories, Inc.

JUSTRITE MANUFACTURING CO.
2061 N. SOUTHPORT AVE. CHICAGO, ILL.

C. F. ANDERSON & CO.
3225 Calumet Avenue Chicago, Illinois
Manufacturers of **Folding Machines • Bundling Presses Upright Trucks • Banding Presses**
Magazine Wrapping Machines Fibre Sign Pasting and Folding Machines
Timetable Folding Machines Vertical File Folder Machines

HUMIDIFYING—COOLING—DRYING
B. OFFEN & CO.
608 So. Dearborn St., Chicago
Write for illustrated pamphlets
"AIR CONDITIONING AND HUMIDITY CONTROL"

TINGUE
PRINTING PRESS BLANKETS

TINGUE, BROWN & CO.
114-120 East 23rd St. NEW YORK, N. Y.
1227 Wabash Ave. CHICAGO, ILL.
723 E. Washington Blvd. LOS ANGELES, CAL.

SAFETY • RELIABILITY • ECONOMY
CLINE
PRESS DRIVES and CONTROL Reels, Tensions and Pasters...
CLINE SYSTEM
CLINE ELEC. MFG. CO.
Chicago: 211 West Wacker Drive
New York: 220 East 42nd Street
San Francisco: 1st Nat'l Bank Bldg.

This is the printing industry's own pioneer plan in scrap salvage...

miller
WARTIME SCRAP ALLOWANCE PLAN

FOR FULL DETAILS, WRITE
MILLER PRINTING MACHINERY CO.
PITTSBURGH, PA.

GENERAL REPAIR OF LINOTYPE AND INTERTYPE MOLDS (ANY KIND, ANY SIZE). PARTS, ETC., SINCE 1912
Makers of Reid Magazine Racks, Etc.
WILLIAM REID & CO., 2271 Clybourn Ave., Chicago, Ill.

$325
GET THE FACTS!
ON THE
NEW *Rouse* BAND SAW
H. B. ROUSE & COMPANY
2216 N. WAYNE AVE., CHICAGO, ILL.

DUPLEX PRESSES
Semi-Cylindrical • Unitubular
Tubular • High Speed Flat Bed
Flat Bed • Stereo Machinery
The Duplex Printing Press Co.
Battle Creek, Mich.

FOR IMMEDIATE DELIVERY
Sale
Priced reasonably for immediate disposal
★ The NEW 27"x 41" Miller Two-Color Automatic Press. Serial No. 5500. Used less than 2 years.
★ Two-Color Miller Automatic Press, 25"x 38". Serial No. 4000.
Chicago Printers' Machinery Works
609 West Lake St. Chicago, Illinois

WIRE STITCHING MACHINERY — AND THE WAR!
★
Due to war work our production of both new and rebuilt wire stitching machinery has been greatly curtailed. Nevertheless, we want to be as helpful to our customers and friends as our facilities and time will allow. If your request for services is delayed, we ask you to be patient. If at any time you have any inquiries or questions as how to get the most out of your present equipment, we will welcome a letter.
W. R. Pabich Manufacturing Company, 2855 North Rockwell St., CHICAGO, ILLINOIS

be used for proofing purposes inasmuch as newspapers now must use untoned ink for printing. In reply to a question, Mr. Park said he didn't believe a coarser halftone screen would help in securing better reproduction, and in this he seemed to have the support of the majority in the audience. In his opinion, an inspection of two halftones comparatively alike on a picture page, will show that one prints well and the other does not. One can only conclude that something might have been done to the copy to improve the poorer reproduction.

More contrast in photographs would help newspaper printing because of the necessity for using untoned ink.

Arthur H. Burns asserted that the most important requirement for good reproduction is for the photo-engraver to get more depth in the original plate.

George Speyer, Chicago Office, J. Walter Thompson Co., emphatically agreed with Mr. Burns that more depth in halftone screens definitely is needed for better newspaper reproduction. He also proposed that the AAAA men be notified, and in turn they would notify photo-engravers to use an ink for proofing just like that used in printing newspapers so that by comparison the final print in the paper won't be poorer than the engravers' proofs. Mr. Speyer pleaded for more time allowance in the plant to get better reproduction. He asserted one can always tell when a plate has been produced under rush conditions.

Robert A. Travis, President, Color Production Service, New York, discussed the complaint about color comic mats being out of register where half of the page is made up of commercial advertising. Mr. Travis admitted that this difficulty does occur on rare occasions. It has been his experience that less than 2% of these mats show misregister when sent out. Occasionally, the trouble is caused by the time element. Once in a while his firm must flatcast from syndicate mats because there is no time to secure new ones. He stated his company doesn't mind replacing defective material. "But," he asked, "send the old mats back—if it's our fault let us see what we have done."

John Howell, Cleveland *Plain Dealer* dispatch room, complained about receipt of shallow advertising mats, and inquired: "Do agencies require certain depths and if so what are the depths?"

E. Thos. McBreen stated that in his company's case, he checks the original plates and a number of the first mats off. The trouble is that it is impossible to check all of the mats.

George Fuller said that in many cases the mat comes in just before an edition and there is no time to do anything about replacing the mats.

George Speyer stated that this difficulty again reverts back to the desirability of allowing time enough to make a good pattern.

Mr. Speyer took newspaper executives to task by stating: "It is a shame, the manner in which newspapers return electros to agencies in cases where only one electro is available and must be used in two or three other papers." Sometimes it is necessary to spend time and money repairing an electro damaged in shipment. He asked for careful packing of plates.

Plastic Plates

(Continued from Page 13)

weighs less than 1 lb. Plates 0.065 in. thick, like the kind furnished publishers by advertisers, weigh 1.6 grams per sq. in. or 283 sq. in. to the pound.

Without going into complete details for molding the thermoplastic plates, it may be said that after the proper molding period in the heated hydraulic press has been terminated, the form assembly is withdrawn and is placed in a chilling press to "set" the plate. The platens of the chilling press are water-cooled.

After the plate has been separated from its matrix, it is trimmed to size and may be mounted on wood block. It may also be routed.

Because of the thermoplastic qualities of Bakelite printing plates, they may be curved to conform to a given printing press plate cylinder. To accomplish this, the plate may be immersed in water at 160 deg. F. temp., or placed in an oven at the same temperature until the plate is sufficiently flexible for curving. The plate is then placed in a curved forming device or plate former for each particular curvature and the plate is allowed to cool in the curved position.

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Reid, Wm., Co.	47
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Rochester Athenaeum & Mechanics Institute	45
Rouse, H. B., & Co.	47
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SKF Industries, Inc.	27
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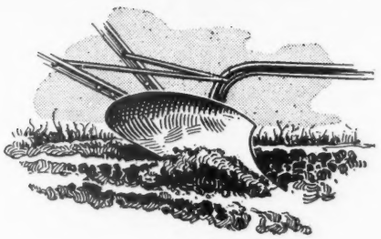
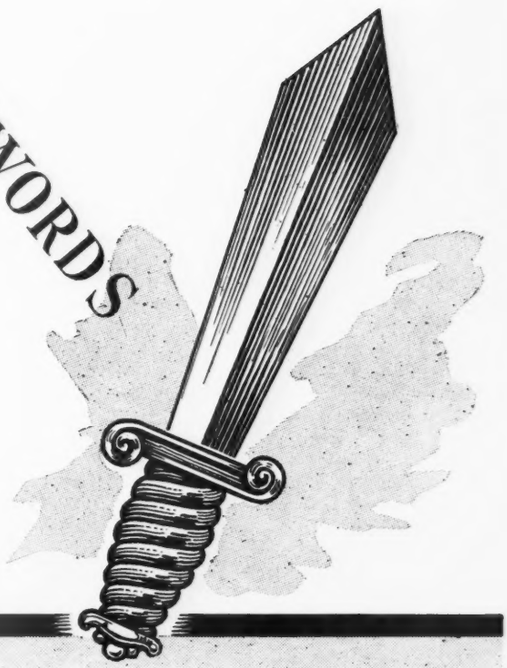
United American Metals Corp.	43
Vandercook & Sons, Inc.	42
Vulcan Proofing Co.	29
Wetter Numbering Machine Co.	41
Wood Flong Corp.	33
Wood Newspaper Mach. Corp.	Inside Back Cover



PLOW SHARES INTO SWORDS



SOMEDAY, it will be possible to report the whole amazing story:—

?? — — —

THANK "WE THE PEOPLE" FOR THIS

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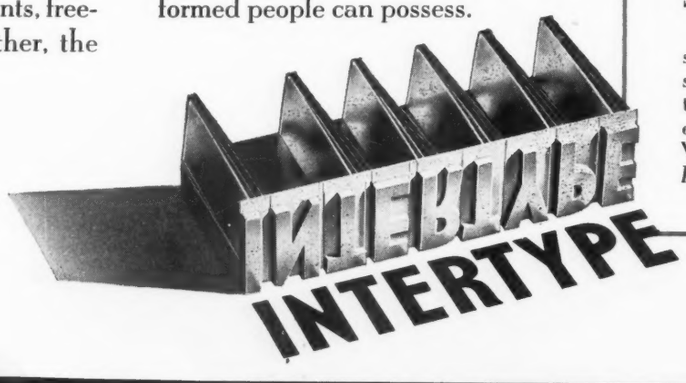

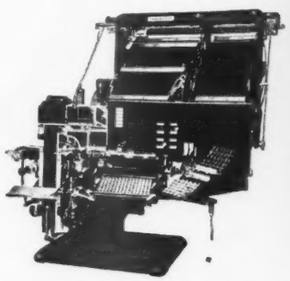

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